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Philadelphia Oxidant Enhancement Study
Hydrocarbon Analysis

Washington State Univ.
Pullman

Prepared for

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Research Triangle Park, NC

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Philadelphia Oxidant Enhancement Study: Hydrocarbon Analysis

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Contract No. 68-02-3339

Prepared for

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Research Triangle Park, North Carolina 27711

August 1980

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ABSTRACT

An extensive hydrocarbon monitoring program, including ground level and aerial sampling, was conducted in the Philadelphia area during July and August of 1978. Individual hydrocarbon identities and concentrations were determined in approximatley 150 samples. One-hour integrated samples were collected each day during the 0600-0700 and 0800-0900 EDT time periods at two Philadelphia locations. Airborne sampling was performed by an EPA-Las Vegas Helicopter. The hydrocarbon data will be utilized to improve current knowledge concerning photochemical processes which lead to peak ozone and NO_2 concentrations in the Northeastern United States.

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ACKNOWLEDGEMENT

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INTRODUCTION

EPA is currently attempting to assist various states with control requirements needed to attain the ambient air quality standard for ozone. Part of this effort involves assessing the utility of various air quality simulaiton models for designing ozone control strategies. To test the usefulness of the modeling approach, an attempt is being made to verify a model in several urban areas which typlify different photochemical and meteorological regimes. During the summer of 1979 a comprehensive data gathering program was conducted in the Philadelphia area. Several research organizations aided in this effort to acquire sufficient air quality, meteorological and emissions data for applying the SAI Photochemical model. The ambient measurements will also serve as validation points for evaluating the model's predictive capabilities.

Since hydrocarbons are one of the important precursors for oxidant formation, they play an integral part in any modeling effort. The SAI model requires that hydrocarbons be grouped together according to carbon bond type. Thus paraffins, olefins and aromatics are treated as separate input parameters in the model. Acquisition of this type of hydrocarbon information was the primary goal of our study in the Philadelphia region during the summer of 1979. Results from this hydrocarbon measurement program are described in this report.

EXPERIMENTAL PROCEDURES

Approximatley 150 samples for detailed hydrocarbon analysis were collected in the Philadelphia area during the period from July 15 to August 15, 1979. Samples were collected at two ground level monitoring sites and aloft in a helicopter. All analyses were completed within 24 hours of when the sample was collected.

SAMPLING SITES AND PROCEDURES

Our base of operations in the Philadelphia area was located at Drexel University. Analytical instrumentation was set up in laboratory space provided by the chemistry department. Four samples for detailed hydrocarbon analysis were collected each day at two City of Philadelphia air monitoring stations. One-hour integrated samples were obtained at each site between the hours of 0600-0700 and 0800-0900 EDT. Air was transferred from the station's sample manifold into a 20 L.Teflon bag by means of a Komhyr Teflon pump (Science Pump Corp.). Both the pumps and the bags were shown to be free of contamination. In addition to the four integrated samples, two grab samples were collected in stainless steel canisters at various locations in the Philadelphia area on most days. The canisters were filled to a positive pressure with a battery operated Metal Bellows pump.

Figures 1 and 2 show the location of the study sites. The routine collection stations were located at the Franklin Institute near downtown Philadelphia and in a more industrialized area just south of the approach to the Walt Whitman Bridge. The roving sites depicted in Figure 1 represent typical grab sample collection points.

On days when the EPA-Las Vegas helicopter was able to fly, four airborne samples were acquired by pressurizing stainless steel canisters with a Metal Bellows pump.

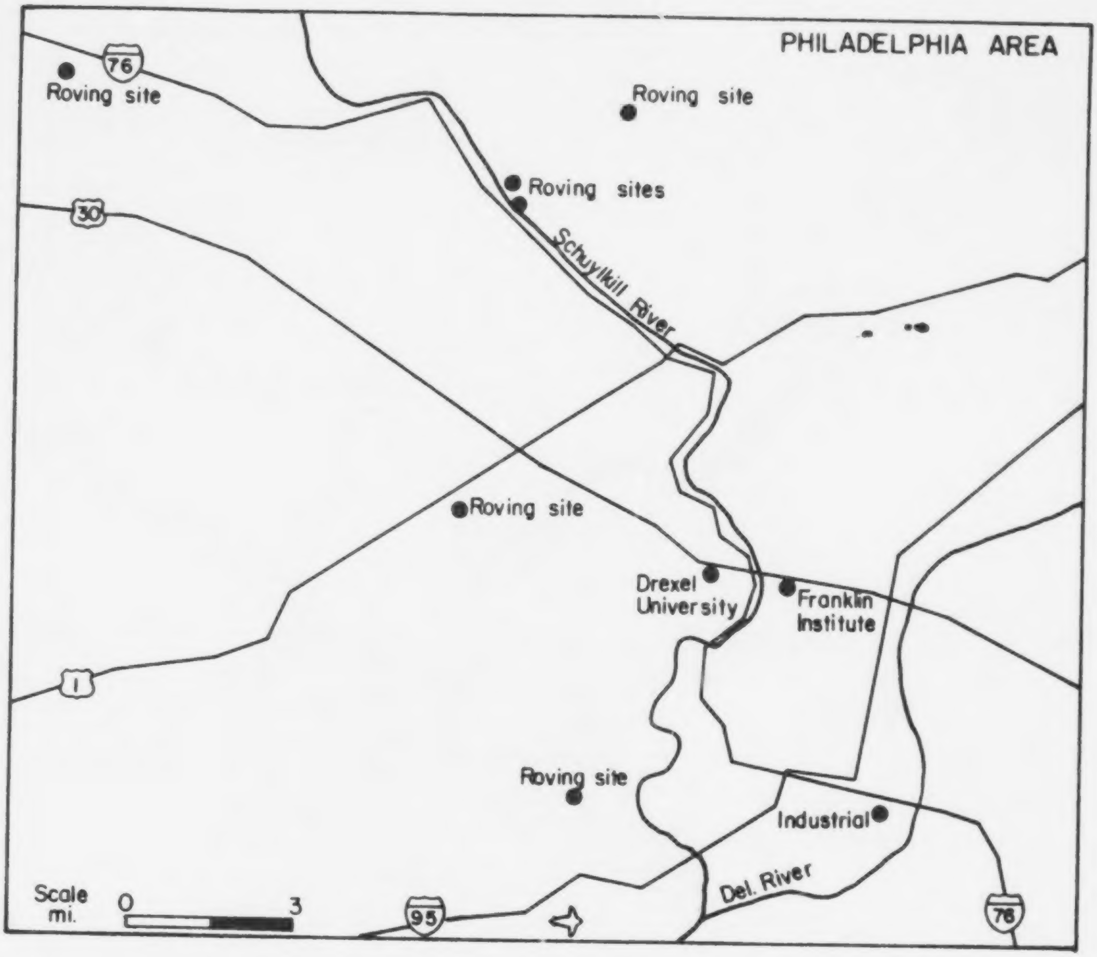
PHILADELPHIA AREA
76
Roving site
Roving site
Roving sites
30
Schuylkill River
Roving site
Drexel University
Franklin Institute
1
Roving site
Industrial
Del. River
Scale mi.
0
3
95
76

Figure 1. Map of Philadelphia Area.

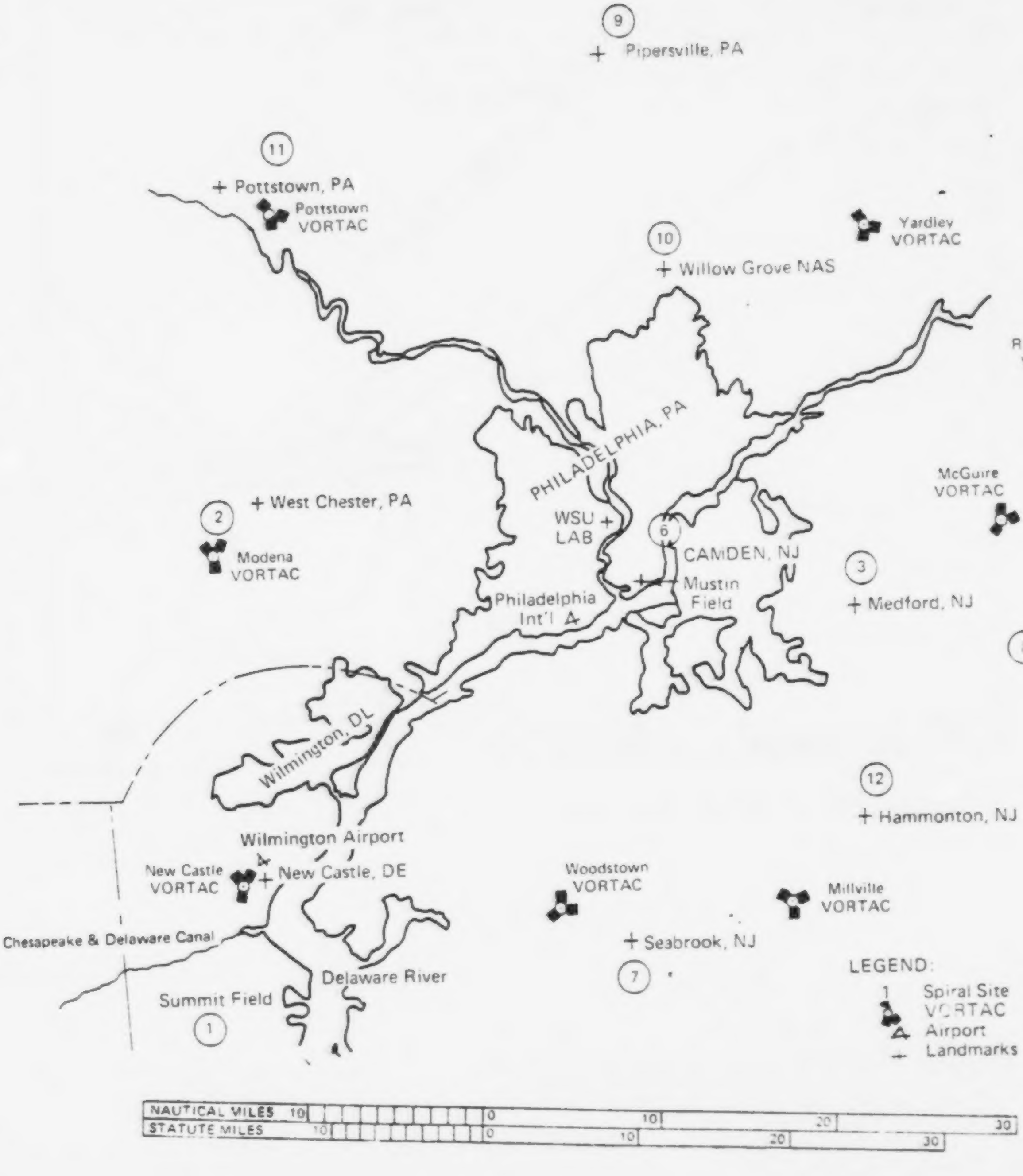
9
Pipersville, PA
11
Pottstown, PA
Pottstown VORTAC
10
Willow Grove NAS
Yardley VORTAC
4
Robbinsville VORTAC
PHILADELPHIA, PA
WSU LAB
6
CAMDEN, NJ
Mustin Field
2
West Chester, PA
Modena VORTAC
McGuire VORTAC
3
Medford, NJ
Philadelphia Int'l
8
Wilmington, DL
12
Hammonton, NJ
Wilmington Airport
New Castle VORTAC
New Castle, DE
Woodstown VORTAC
Millville VORTAC
Chesapeake & Delaware Canal
Seabrook, NJ
7
Delaware River
Summit Field
1
LEGEND:
1 Spiral Site
VORTAC
Airport
Landmarks
NAUTICAL MILES 10 0 10 20 30
STATUTE MILES 10 0 10 20 30

Figure 2. Map of New Jersey and Southeastern Pennsylvania

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SPIRAL SITE DESCRIPTIONS

SITE NUMBER		LOCATION
1	SUMMIT FIELD	- 1 nautical mile (nmi) south of the Chesapeake & Delaware Canal in Delaware. Elevation 71 ft, 39°31'17" N, 75°43'15" W.
2	MODENA	- Altor power substation, 3 nmi northeast of the Modena VORTAC, near West Chester, PA. Elevation 200 ft, 39°58'08" N, 75°39'59" W.
3	MEDFORD	- Medford Field (the Flying "W" Ranch), 2 nmi north of Medford, NJ. Elevation 50 ft, 39°56'05" N, 74°48'27"W.
4	TRENTON/ ROBBINSVILLE	- Trenton/Robbinsville Airfield, 2 nmi east of Trenton, NJ, beside the NJ turnpike. Elevation 119 ft. 40°12'56" N, 74°36'25" W.
5	LAKEHURST	- North of Lakehurst, NJ approximately 4 nmi. (This site was never used.) Elevation 103 39°58'45" N, 74°24'30"W.
6	CENTER CITY	- Penn's Landing, Philadelphia, PA. Elevation 10 ft, 39°56'45" N, 75°08'11" W.
7	BUCKS FIELD	- Palatine, NJ. 4 nmi east of Seabrook, NJ. Elevation 100 ft, 39°32'10" N, 75°11'12" W.
8	Four Mile (McGuire AFB)	- Four Mile, NJ. A New Jersey mental hospital located on the 310° radial, 9 nmi from the Coyle VORTAC. Elevation 100 ft, 39°53'12" N, 74°35'00" W.
9	PIPERSVILLE	- Pleasant Valley Park, PA. A ravine 3nmi east-northeast of Pipersville, PA and 2 nmi northeast of Point Pleasant, PA. Elevation 150 ft, 40°26'15" N, 75°04'46" W.
10	WILLOW GROVE	- Naval Air Station (NAS) Willow Grove, PA. Elevation 36 ft. 40°11'51" N, 75°08'47" W.
11	YARROW FIELD	- Yarrow Field, Schwenksville, PA. (Sometimes referred to as PERKIOMEN.) Elevation 310 ft. 40°15'00" N, 75°25'00" W.
12	HAMMONTON	- Hammonton Field, Hammonton, NJ. Elevation 69 ft, 39°41'16" N, 74°44'42" W.

GC PROCEDURES

Gas chromatographic analyses were performed with two Perking Elmer 900 chromatographs equipped with subambient temperature programming capabilities. The normal carrier gas flow system was modified to include a freeze-out trap for concentrating organics in ambient air.(1) The column used to separate light hydrocarbons (C_2-C_6) was a packed capillary (20' x 1/16") containing Durapak n-Octane/Porasil C. When operated with a carrier gas (He) flow of 5 ml/min and temperature programmed from -60° to 80°C at 24°/min, this column provided excellent resolution of the light hydrocarbon fraction.

A SE-30 glass capillary column (J & W Scientific) was used to separate hydrocarbons in the C_5 to C_{10} molecular weight range. Helium was used as the carrier gas with column flow maintained at 1 ml/min. Optimum results were obtained by temperature programming from -50° to 80°C at 4°/min.

Air from the sample container was drawn through the cryogenic trap into an evacuated cylinder. The sample volume was monitored by measuring the pressure change in the evacuated cylinder. Normally, 500 ml of air was passed throught the freeze out trap which was maintained at -186°C (liquid oxygen). The trap itself consisted of a 1/8" x 6" stainless steel tube packed with 60-80 mesh glass beads. This trap was attached to the gas chromatograph via a mini-volume gas sampling valve (Carle Inst.).

Output from the gas chromatographs was channeled directly into a Hewlett Packard 3352 data system. This is a computer based system which provides individual hydrocarbon identification and quantitation information immediately following each gc run.

A Hewlett Packard 5930A Mass Spectrometer coupled with a Hewlett Packard 5700 Gas Chromatograph was employed in our home laboratory for gc-ms analysis. The mass spectrometer is a standard quadrupole instrument which has been modified by the addition of a second 4-inch diffusion pump. The glass capillary columns we use for hydrocarbon analyses require a low carrier gas flow rate (<5 ml/min.). This, coupled with the extra pumping capacity, permits the total gc column effluent to be passed directly into the mass spectometer. Thus, the mass spectrometer serves exactly the same function as the flame ionization detector and a chromatogram resulting from the flame detector will be nearly identical to that recorded by minitoring the total ion current in the mass spectrometer. This makes it relatively easy to verify peak assignments. Samples collected and analyzed in the field using the flame ionization detector are shipped to our mass spec laboratory where they are analyzed using the same chromatographic conditions as in the field. Hydrocarbon identities reported in this study are based on retention time comparisons with standards plus mass spectral fragmentation patterns.

CALIBRATION

Calibration of the Perkin Elmer gas chromatographs was achieved by measuring instrument response to known concentrations of hexane in air. Three different hexane sources were used to prepare standards in the ppbC range. In the field, a .209 ppbC neo-hexane standard was run each day in order to insure instrument stability and response reproducivility.

We have participated in several hydrocarbon intercomparison checks with other research groups during the past few years. In all cases our results have been in good agreement. Table 1 shows data obtained by Scott Environmental Technology, Inc. during their cross reference studies.

TABLE 1. Results of collaborative Gas Analysis Cross Reference Service Non-methane Hydrocarbon (C_4H_{10}) by GC Analysis (2).

Company	Analysis (ppb)
EPA (ESRL-RTP)	.269
Scott Env. Tech.	.202
Washington State Univ.	.249

As can be seen, our analysis results were intermediate between the other two groups and very close to the mean (.240 ppm).

During the 1979 field program in Pennsylvania, several samples were interchanged between our group and the EPA (RTP-ESRL) field laboratory which was located east of New York City on Long Island. Table 2 lists data obtained from two ambient air sample canisters that were exchanged.

TABLE 2. Hydrocarbon Intercomparisons Between WSU and EPA-RTP.

Sample	Identified NMHC (ppmC)	WSU Species Breakdown (%) O	A	P
Canister #1	.520	18	22	56
Canister #2	.483	14	23	58

Sample	Identified NMHC (ppmC)	EPA Species Breakdown (%) O	A	P
Canister #1	.488	14	32	49
Canister #2	.465	12	29	54

Both the total quantity of hydrocarbons identified and the species breakdown data are in fairly good agreement.

RESULTS

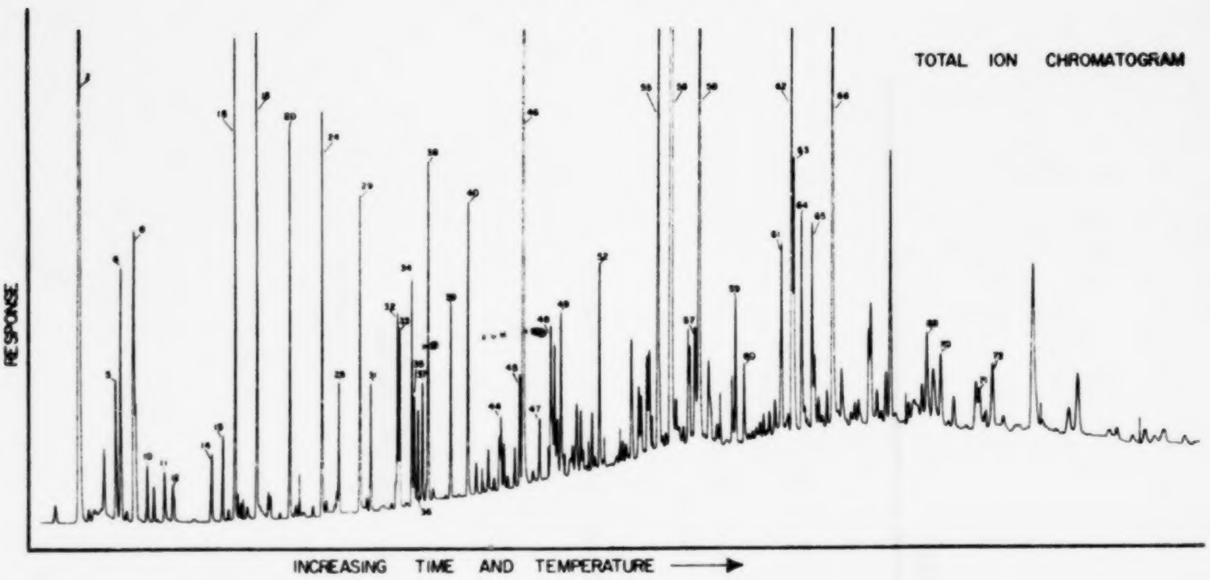
Individual hydrocarbon information was obtained from approximately 150 samples collected in the Philadelphia area. As indicated previously, sampels were routinely obtained between 0600-0700 and 0800-0900 EDT at two fixed surface sites. Other samples were collected in the Philadelphia area at various ground level locations and aloft from an instrumented helicopter.

As pointed out in the Experimental Section, individual hydrocarbon identities were established through a comparison of retention times and mass spectral fragmentation patterns. Using these procedures we were able to identify about 75 hydrocarbon species. This generally corresponds to at least 80% of the individual hydrocarbon total. Light hydrocarbon identities were easily established on a retention basis. Figure 3 shows a total ion chromatogram obtained from an ambient sample. The peaks which represent hydrocarbon compounds in the C_5-C_{12} molecular weight range were assigned primarily on the basis of fragmentation patterns.

Once a hydrocarbon pattern has been established using the gc-ms technique, it can easily be extrapolated to the large number of field samples since we employ exactly the same column and gas chromatographic conditions in both the field analysis (flame ionization detector) and laboratory analysis (mass spec detector). For example, Figure 4 shows a chomatogram typical of those obtained in the field. The pattern provided by toluene, ethylbenzene, p & m-xylene and o-xylene (peaks 46,55,56 and 58) is readily distinguishable in both chromatograms. There are other commanly encountered patterns in the lower molecular weight ranges as well. Using these marker peaks, the low concentrations peaks recorded in a field chromatogram can usually be identified.

The results of this procedure are exemplified in Table 3, which lists individual hydrocarbon concentrations in a sample collected at Franklin Institute on the morning of July 26. As indicated near the bottom of the table, the total of all identified hydrocarbons was 709 ppbC. The small unidentified peaks in the chromatogram amounted to an additional 109 ppbC. Therefore, a total of 818 ppbC was recorded in this sample 87% of which was assignable to specific hydrocarbons.

All of the ethylene data reported for the Frnaklin Institute and Industrial sites are questionable. Consequently, we have flagged ethylene concentration as shown in Table 3 and have not included these data in the summations. Neither of the City of Philadelphia monitoring stations had ethylene



1. 2 - Methyl - 1 - butene
2. 2 - Methylbutane
3. Halocarbon
4. 1 - Pentene
5. 3 - Methyl - 1 - butene
6. n - Pentane
7. Isoprene
8. Carbon disulfide
9. t - 2 - Pentene
10. c - 2 - Pentene
11. 2 - Methyl - 2 - butene
12. 2,2 - Dimethylbutane
13. Cyclopentene
14. (Cyclopentane
    (4 - Methyl - 1 - pentene
15. 2,3 - Dimethylbutane
16. (2 - Methylpentane
    (t - 4 - Methyl - 2 - pentene
17. c - 4 - Methyl - 2 - pentene
18. 3 - Methylpentane
19. (2 - Methyl - 1 - pentene
    (1 - Hexene
20. n - Hexane
21. t - 2 - Hexene
22. (2 - Methyl - 2 - pentene
    (t - 3 - Methyl - 2 - pentene
23. c - 2 - Hexene
24. Methylcyclopentane
25. c - 3 - Methyl - 2 - pentene
26. 2,2,3 - Trimethylbutane
27. 1,1,1 - Trichloroethane
28. 2,4 - Dimethylpentane
29. Benzene
30. 1 - Methylcyclopentene
31. Cyclohexane
32. 2 - Methylhexane
33. 2,3 - Dimethylpentane
34. 3 - Methylhexane
35. Dimethylcyclopentane
36. Dimethylcyclopentane
37. Dimethylcyclopentane
38. 2,2,3 - Trimethylpentane
39. n - Heptane
40. Methylcyclohexane
41. Trimethylcyclopentane
42. Ethylcyclopentane
43. 2,5 - Dimethylhexane
44. 2,4 - Dimethylhexane
45. 2,3,4 - Trimethylpentane
46. Toluene
47. 2,3 - Dimethylhexane
48. 2 - Methylheptane
49. (3 - Ethylhexane
    (3 - Methylheptane
50. C - 9 Alkane
51. Dimethylcyclohexane
52. n - Octane
53. Ethylcyclohexane
54. C - 9 Alkane
55. Ethylbenzene
56. (p - Xylene
    (m - Xylene
57. Styrene
58. o - Xylene
59. n - Nonane
60. i - Propylbenzene
61. n - Propylbenzene
62. 3 - Ethyltoluene
63. 2 - Ethyltoluene
64. 1 - Ethyltoluene
65. 1,3,5 - Trimethylbenzene
66. 1,2,4 - Trimethylbenzene
67. 1,2,3 - Trimethylbenzene
68. Methylstyrene
69. 1,3 - Diethylbenzene
70. 1,4 - Diethylbenzene
71. C - 10 Subst'd. benzene
72. C - 10 Subst'd. benzene

Figure 3. Total ion chromatogram from ambient air sample.

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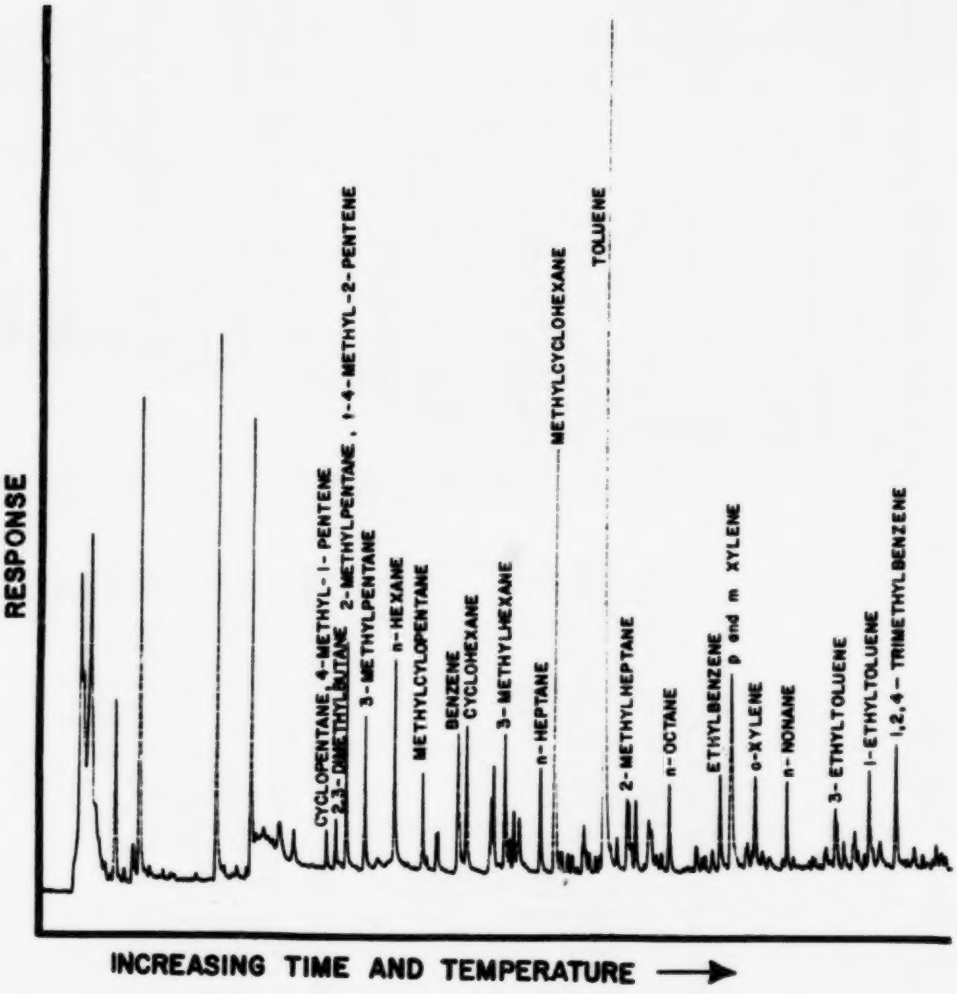

Figure 4. FID chromatogram for sample collected between 0600-0700 on July 27 at the Franklin Institute site.

TABLE 3. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/26/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
13.5	Ethane	6.8	2,3-Dimethylpentane
(40.5)	Ethylene	9.0	3-Methylhexane
12.8	Acetylene	5.3	2,2,3-Trimethylpentane
138.	Propane	6.0	n-Heptane
9.8	Propene	6.0	Methylcyclohexane
45.0	i-Butane	2.3	2,4-Dimethylhexane
86.3	n-Butane	1.5	2,3,4-Trimethylpentane
5.3	1-Butene	30.0	Toluene
5.3	i-Butene	1.5	2,3-Dimethylhexane
11.3	t-2-Butene	5.3	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
62.3	i-Pentane	3.8	n-Octane
34.5	n-Pentane	2.3	Ethylcyclohexane
6.0	1-Pentene	8.3	Ethylbenzene
---	t-2-Pentene	21.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	9.0	o-Xylene
3.0	Cyclopentane	4.5	n-Nonane
4.5	2,3-Dimethylbutane	5.3	i-Propylbenzene
20.3	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	9.0	p-Ethyltoluene
12.8	3-Methylpentane	4.5	m-Ethyltoluene
1.5	1-Hexene	9.8	o-Ethyltoluene
16.5	n-Hexane	4.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	9.8	1,2,4-Trimethylbenzene
0.8	c-2-Hexene	2.3	1,2,3-Trimethylbenzene
8.3	Methylcyclopentane	2.3	Methylstyrene
4.5	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
15.0	Benzene	1.5	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	46	6	Total Unidentified Hydrocarbons	109
Σ Aromatic	137	19		
Σ Paraffin	513	72	Total NMHC by summing individual species	818
Acetylene	13	2		
	709			

--- Less than 0.5 ppbC

combustors attached to the exhaust lines from their chemiluminescent ozone monitors. At the Industrial monitoring site the exhaust and sample inlet lines were fairly close together and as a result ethylene contamination problems were greatest there. An average ethylene/acetylene ratio of 1.3 was calculated from roving and aircraft samples that were not tainted with ethylene. The corresponding ratios at the Franklin Institute and Industrial sites were 9.0 and 39.5, respectively. Hence, average ethylene concentrations determined at the two ground monitoring stations exceeded the true value by factors of about 7 and 30.

Appendicies A-H contain a tabulation of hydrocarbon data for all samples collected in the Philadelphia area during the summer 1979 intensive sampling period. Information similar to that contained in Table 3 is provided for each site on all sampling days. In order to summarize hydrocarbon data contained in the Appendices, a series of tables have been prepared which illustrate notable features.

Table 4 lists the nonmethane hydrocarbon totals measured at the two primary ground sites. Concentrations varied between about 0.2 and 1.7 ppmC with highest levels generally recorded at the Franklin Institute site. Average concentrations in the 0600-0700 and 0800-0900 samples at the Industrial site were nearly identical (604 vs 592 ppbC) while at Franklin Institue the 0800-0900 samples averaged 20% higher than those collected during the earlier period (836 vs 642 ppbC). For the most part, hydrocarbon concentrations trends were similar at the two sites.

A listing of the hydrocarbon compositional breakdown at the two Philadelphia sites is provided in Table 5. Olefins generally comprised less than 10% of the total, aromatics about 25% and paraffins between 60 and 70%. As can be seen in Table 5, the average olefinic, aromatic and paraffinic content at the two sites was nearly identical.

Tables 6 and 7 give average concentrations for the most abundant hydrocarbons. Standard deviations included in these two tables indicate that individual hydrocarbon concentrations varied considerably from day to day. In most cases the standard deviation is about the same as the mean. Table 7 also lists average individual hydrocarbon concentration measured in four one-hour integrated samples collected during the afternoon hours at the Industrial site. Afternoon levels were generally about a factor of two lower than those recorded during the morning hours.

Hydrocarbon data obtained from samples collected aloft are contained in Appendix F. Since we know little about conditions under which these samples were collected, it is difficult to provide much meaningful information. However, it does appear possible to categorize the airborne hydrocarbon data into three groups as shown in Table 8. Concentrations in samples collected above the early morning surface inversion averaged 45 ppbC. This compares to 233 ppbC for samples collected below the surface inversion. These measurements were made in the early morning hours at a point upwind of Philadelphia shortly after breakup of the morning inversion averaged 361 ppbC. Thus average hydrocarbon concentrations measured in airborne samples were considerably below those measured at ground level.

A secondary goal of this research program was to compare ambient hydrocarbon levels as determined by summing individual species with non-methane hydrocarbon data obtained from a total hydrocarbon analysis. The number of intercomparison samples was small and therefore a quantitative relationship between the two methods was not established; however, as illustrated in Table 9, the results from the two analysis techniques were in fairly good agreement for samples collected during the morning hours on 8/17/79. However, there is a big difference between the Beckman data dn individual hydrocarbon summation in samples obtained during the afternoon at the Lamberton, NJ site. It appears that the Lamberton bags which were returned to the field laboratory for detailed hydrocarbon analysis were contaminated by gasoline fumes.

In summary, the primary objective of this research program was to obtain ambient hydrocarbon data in the Philadelphia area that could be used in a photochemical modeling effort. This goal was achieved by monitoring hydrocarbon levels and identifying individual species in samples collected between July 15 and August 15, 1979.

Table 4. Nonmethane Hydrocarbon Concentrations (ppbC) obtained by Summing the Individual Species ǂ

	Frankling Institute		Industrial	
Date	0600-0700	0800-0900	0600-0700	0800-0900
7/17	670	1051	1511	809
18	411	639	520	629
19	575	756	448	558
20	1219	831	575	---
23	377	975	575	1048
24	1732	1401	1710	1047
25	910	885	493	988
26	980	818	1139	572
27	214	405	---	666
30	268	622	361	383
31	483	794	424	511
8/1	764	1206	345	975
2	266	546	226	278
3	407	1160	539	700
4	899	996	307	532
5	205	246	290	255
6	227	614	550	691
7	---	949	272	369
8	---	---	878	507
9	---	---	418	452
19	930	777	744	308
14	1023	1409	367	419
15	284	476	588	316
16	---	---	---	---
AVE.	642	836	604	592

ǂ Ethylene not included

Table 5. Percentage Olefins, Aromatics and Paraffins in Surface Samples Collected at Philadelphia.

	Franklin Institute						Industrial					
	0600-0700			0800-0900			0600-0700			0800-0900		
Date	O	A	P	O	A	P	O	A	P	O	A	P
7/17	12	28	60	6	20	72	5	13	79	4	24	69
18	2	27	69	14	28	54	6	26	68	9	24	63
19	2	26	71	6	30	61	5	32	60	9	24	63
20	8	11	30	5	30	51	4	34	61	--	--	--
23	5	31	63	7	23	67	9	27	61	7	20	73
24	2	6	91	6	14	80	9	20	71	8	21	69
25	17	16	66	6	19	74	7	25	66	4	15	81
26	5	11	84	6	19	72	8	36	55	10	31	58
27	2	32	65	5	26	65	--	--	--	4	50	43
30	1	31	67	3	30	64	2	35	60	5	32	59
31	2	35	59	5	27	65	7	32	58	5	30	62
8/1	6	17	76	5	15	79	8	18	72	10	14	75
2	4	23	69	6	25	67	2	31	65	5	28	65
3	3	24	72	5	24	68	5	23	69	5	26	66
4	3	45	52	5	26	68	6	19	73	15	16	67
5	5	26	66	2	29	67	3	27	68	2	30	63
6	3	29	67	9	25	67	7	21	71	8	23	65
7	--	--	--	6	32	60	4	27	66	5	27	66
8	--	--	--	--	--	--	5	10	84	6	15	77
9	--	--	--	--	--	--	5	31	61	7	24	66
10	6	14	80	5	16	77	3	49	48	9	25	66
14	4	34	63	6	27	66	18	12	69	7	14	78
15	4	40	54	7	31	59	5	20	73	4	21	72
16	--	--	--	--	--	--	--	--	--	--	--	--
AVE.	5	25	69	6	25	67	6	26	66	7	24	67

Table 6. Average Concentration (ppbC) of Selected Hydrocarbons at the Franklin Institute Site

	Franklin 0600-0700 N=20	Franklin 0800-0900 N=21
Ethane	14.5 ± 9.0	15.5 ± 8.5
Acetylene	5.5 ± 3.5	13.5 ± 6.5
Propane	51.0 ± 63.0	62.0 ± 67.5
Propene	11.0 ± 12.5	12.0 ± 5.0
i-Butane	38.0 ± 50.0	34.0 ± 22.5
n-Butane	82.5 ± 112.0	74.0 ± 46.5
1-Butene	3.0 ± 4.0	4.0 ± 2.5
i-Butene	3.0 ± 3.5	5.0 ± 3.0
t-2-Butene	2.5 ± 3.5	4.5 ± 3.0
i-Pentane	51.0 ± 48.0	67.0 ± 30.0
n-Pentane	31.0 ± 23.5	39.5 ± 13.5
Cyclopentane	3.0 ± 2.0	3.5 ± 1.0
2,3-Dimethylbutane	4.0 ± 2.0	6.0 ± 2.0
2-Methylpentane	15.0 ± 9.0	25.0 ± 8.0
3-Methylpentane	10.5 ± 5.5	16.0 ± 5.5
n-Hexane	16.0 ± 10.0	23.0 ± 10.0
Methylcyclopentane	6.5 ± 4.0	10.0 ± 4.0
Benzene	8.0 ± 6.5	17.0 ± 5.0
2,3-Dimethylpentane	6.0 ± 3.5	9.5 ± 3.5
3-Methylhexane	8.0 ± 6.0	11.0 ± 4.0
n-Heptane	6.0 ± 3.0	8.5 ± 2.5
Methylcyclohexane	12.5 ± 16.0	8.0 ± 3.5
Toluene	28.0 ± 10.0	40.0 ± 13.5
2-Methylheptane	3.5 ± 2.5	6.0 ± 2.5
3-Ethylhexane	3.0 ± 1.5	4.5 ± 2.0
n-Octane	3.5 ± 1.5	4.5 ± 1.5
Ethylbenzene	7.0 ± 6.0	9.5 ± 3.0
p & m-Xylene	21.0 ± 20.0	28.5 ± 11.0
o-Xylene	8.5 ± 6.0	11.0 ± 3.5
o-Ethyltoluene	6.0 ± 3.0	12.0 ± 3.0
1,2,4-Trimethylbenzene	9.0 ± 4.5	10.5 ± 5.5

Table 7. Average Concentration (ppbC) of Selected Hydrocarbons at the Industrial site.

	Industrial 0600-0700 N=22	Industrial 0800-0900 N=24	Industrial 1400-1500 N=4
Ethane	13.0 ± 7.0	14.5 ± 10.0	12.0 ± 4.5
Acetylene	7.5 ± 5.5	10.5 ± 5.0	5.0 ± 1.0
Propane	28.0 ± 19.0	36.0 ± 32.5	18.5 ± 9.0
Propene	14.0 ± 13.0	14.5 ± 12.0	5.5 ± 1.0
i-Butane	19.5 ± 15.0	22.5 ± 14.0	12.5 ± 2.0
n-Butane	47.0 ± 30.5	52.0 ± 35.0	34.5 ± 11.0
1-Butene	2.5 ± 2.5	3.0 ± 2.5	1.5 ± 2.0
i-Butene	3.0 ± 3.0	4.0 ± 6.0	3.0 ± 2.5
t-2-Butene	2.0 ± 3.0	2.5 ± 2.5	.5 ± 1.0
i-Pentane	41.5 ± 30.5	41.5 ± 22.5	23.5 ± 6.0
n-Pentane	26.5 ± 13.5	25.0 ± 9.5	19.5 ± 6.0
Cyclopentane	2.5 ± 2.5	2.5 ± 1.0	1.5 ± 0.5
2,3-Dimethylbutane	4.5 ± 4.0	4.5 ± 3.0	2.0 ± 0.5
2-Methylpentane	18.5 ± 20.5	14.5 ± 9.0	8.0 ± 1.0
3-Methylpentane	12.5 ± 13.5	10.5 ± 6.0	5.5 ± 1.0
n-Hexane	17.0 ± 11.5	15.5 ± 8.0	9.0 ± 1.5
Methylcyclopentane	8.0 ± 10.0	6.5 ± 4.5	3.0 ± 0.5
Benzene	27.5 ± 45.0	15.5 ± 10.0	7.5 ± 1.0
2,3-Dimethylpentane	9.5 ± 11.5	6.5 ± 3.5	3.0 ± 0.5
3-Methylhexane	12.0 ± 16.5	8.0 ± 4.5	3.5 ± 0.5
n-Heptane	8.0 ± 8.5	6.0 ± 3.0	3.0 ± 0.5
Methylcyclohexane	19.5 ± 49.5	8.5 ± 10.0	3.5 ± 1.5
Toluene	32.5 ± 23.5	28.5 ± 13.0	14.5 ± 2.0
2-Methylheptane	4.0 ± 3.5	3.5 ± 1.5	2.5 ± 0.5
3-Ethylhexane	3.0 ± 3.0	3.0 ± 1.0	1.5 ± 0.5
n-Octane	3.5 ± 3.5	3.5 ± 2.0	2.0 ± 0.5
Ethylbenzene	5.0 ± 2.0	5.0 ± 2.0	3.0 ± 1.0
p & m-Xylene	13.0 ± 5.0	13.5 ± 5.5	7.5 ± 3.0
o-Xylene	6.5 ± 3.5	6.5 ± 2.0	4.0 ± 1.5
o-Ethyltoluene	7.5 ± 4.5	7.5 ± 6.0	4.6 ± 1.5
1,2,4-Trimethylbenzene	9.0 ± 5.5	10.0 ± 6.0	9.0 ± 5.5

Table 8. Summary of Nonmethane Hydrocarbon Concentration (ppbC) in Samples Collected with the EPA-LV Helicopter

Date	NMHC above surface inversion in early morning	NMHC below surface inversion in early morning	NMHC in mixed layer over Philadelphia during late morning
7/23	---	117	---
7/5	29	144	504 382
8/4	---	---	331 430
8/5	58	447	
8/6	---	160	332
8/7	37	---	305 203
8/10	99	---	875 702
8/14	---	299	450 473
8/15	---	---	138 46
8/16	21	---	56 184
AVE.	45	233	361

Table 9. Comparison of Concentration Data Obtained From an Individual and Total Hydrocarbon Analysis.

Site	Date - Time	Summation of Individual Hydrocarbons (ppbC)	Beckman 6800 (ppbC)
Lumberton, NJ			
	8/17 - 1300	1.121	
	8/17 - 1400	.544	
Downingtown, PA			
	8/17 - 0800	.143	.1
	8/17 - 0900	.146	.1
	8/17 - 1000	.261	.1

REFERENCES

1. Westberg, H.H., R.A. Rasmussen and M.W. Holdren. Gas Chromatographic Analysis of Ambient Air for Light Hydrocarbons Using a Chemically Bonded Stationare Phase. Analytical Chemistry, 46(12): 1852, 1974

2. Atmospheric Air Monitoring Cross Reference Service, Scott Environmental Technology, Inc., Report No. 2, October, 1979

APPENDIX A

Individual Hydrocarbon Concentrations in 0600-0700 Franklin Institute Samples

TABLE A1. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	7.5	2,3-Dimethylpentane
(196.)	Ethylene	8.0	3-Methylhexane
11.5	Acetylene	5.0	2,2,3-Trimethylpentane
17.0	Propane	6.0	n-Heptane
8.0	Propene	5.0	Methylcyclohexane
17.0	i-Butane	2.5	2,4-Dimethylhexane
41.5	n-Butane	1.0	2,3,4-Trimethylpentane
12.5	1-Butene	50.0	Toluene
10.0	i-Butene	2.0	2,3-Dimethylhexane
4.5	t-2-Butene	4.5	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
44.0	i-Pentane	3.5	n-Octane
32.5	n-Pentane	2.0	Ethylcyclohexane
---	1-Pentene	7.0	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	8.0	o-Xylene
2.5	Cyclopentane	5.5	n-Nonane
4.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
20.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
13.5	3-Methylpentane	3.0	m-Ethyltoluene
6.0	1-Hexene	8.0	o-Ethyltoluene
23.5	n-Hexane	8.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	10.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	3.0	1,2,3-Trimethylbenzene
8.0	Methylcyclopentane	1.5	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
12.0	Benzene	---	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	46	10	Total Unidentified Hydrocarbons	190
Σ Aromatic	132	28		
Σ Paraffin	288	60	Total NMHC by summing individual species	670
Acetylene	12	3		
	478			

TABLE A2. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/18/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	4.5	2,3-Dimethylpentane
(93.5)	Ethylene	5.0	3-Methylhexane
8.5	Acetylene	3.8	2,2,3-Trimethylpentane
19.0	Propane	4.0	n-Heptane
5.6	Propene	4.5	Methylcyclohexane
14.0	i-Butane	2.0	2,4-Dimethylhexane
37.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	17.5	Toluene
---	i-Butene	1.5	2,3-Dimethylhexane
---	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
26.5	i-Pentane	4.0	n-Octane
17.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	16.0	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.0	Cyclopentane	3.0	n-Nonane
3.5	2,3-Dimethylbutane	---	i-Propylbenzene
12.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
7.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	5.5	o-Ethyltoluene
11.0	n-Hexane	7.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
5.0	Methylcyclopentane	---	Methylstyrene
3.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
8.0	Benzene	---	1,4-Diethylbenzene
5.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	7	2
Σ Aromatic	81	27
Σ Paraffin	209	69
Acetylene	9	3
	305	

	ppbC
Total Unidentified Hydrocarbons	106
Total NMHC by summing individual species	441

TABLE A3. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/19/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	16.0	2,3-Dimethylpentane
(8.0)	Ethylene	26.0	3-Methylhexane
8.0	Acetylene	10.0	2,2,3-Trimethylpentane
10.5	Propane	10.0	n-Heptane
5.0	Propene	70.0	Methylcyclohexane
12.0	i-Butane	8.5	2,4-Dimethylhexane
22.5	n-Butane	1.0	2,3,4-Trimethylpentane
---	1-Butene	38.0	Toluene
---	i-Butene	2.5	2,3-Dimethylhexane
---	t-2-Butene	5.5	2-Methylheptane
---	c-2-Butene	4.0	3-Ethylhexane
24.5	i-Pentane	2.5	n-Octane
14.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	6.5	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	7.0	o-Xylene
2.0	Cyclopentane	3.5	n-Nonane
3.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
13.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
8.0	3-Methylpentane	3.5	m-Ethyltoluene
---	1-Hexene	6.5	o-Ethyltoluene
11.5	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
5.5	Methylcyclopentane	---	Methylstyrene
6.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
10.5	Benzene	2.0	1,4-Diethylbenzene
14.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	8	2
Σ Aromatic	119	26
Σ Paraffin	326	71
Acetylene	8	2
	460	

	ppbC
Total Unidentified Hydrocarbons	115
Total NMHC by summing individual species	575

TABLE A4. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/20/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.5	Ethane	10.5	2,3-Dimethylpentane
(2.5)	Ethylene	14.0	3-Methylhexane
8.5	Acetylene	9.5	2,2,3-Trimethylpentane
71.5	Propane	11.0	n-Heptane
34.5	Propene	21.0	Methylcyclohexane
130	i-Butane	4.0	2,4-Dimethylhexane
240	n-Butane	1.5	2,3,4-Trimethylpentane
12.0	1-Butene	38.5	Toluene
9.0	i-Butene	2.5	2,3-Dimethylhexane
11.0	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
159	i-Pentane	5.0	n-Octane
68	n-Pentane	2.0	Ethylcyclohexane
---	1-Pentene	8.0	Ethylbenzene
---	t-2-Pentene	21.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
1.0	Cyclopentene	8.0	o-Xylene
6.0	Cyclopentane	4.0	n-Nonane
7.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
30.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
19.0	3-Methylpentane	4.0	m-Ethyltoluene
---	1-Hexene	8.5	o-Ethyltoluene
27.5	n-Hexane	6.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
13.5	Methylcyclopentane	1.5	Methylstyrene
7.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
13.0	Benzene	1.0	1,4-Diethylbenzene
10.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	85	8
Σ Aromatic	126	11
Σ Paraffin	885	80
Acetylene	9	1
	1104	

	ppbC
Total Unidentified Hydrocarbons	116
Total NMHC by summing individual species	1219

TABLE A5. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/23/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	4.0	2,3-Dimethylpentane
(49.5)	Ethylene	4.5	3-Methylhexane
4.5	Acetylene	3.5	2,2,3-Trimethylpentane
24.0	Propane	3.5	n-Heptane
5.5	Propene	3.5	Methylcyclohexane
12.5	i-Butane	1.5	2,4-Dimethylhexane
26.0	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	22.5	Toluene
2.0	i-Butene	1.0	2,3-Dimethylhexane
2.0	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
23.0	i-Pentane	2.0	n-Octane
14.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	14.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	5.5	o-Xylene
1.5	Cyclopentane	5.5	n-Nonane
3.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
11.5	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
8.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	7.0	o-Ethyltoluene
14.0	n-Hexane	3.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	12.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	1.0	Methylstyrene
3.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
7.5	Benzene	1.0	1,4-Diethylbenzene
5.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	14	5
Σ Aromatic	94	31
Σ Paraffin	193	63
Acetylene	5	2
	307	

	ppbC
Total Unidentified Hydrocarbons	70
Total NMHC by summing individual species	377

TABLE A6. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/24/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
30.5	Ethane	10.5	2,3-Dimethylpentane
(20.0)	Ethylene	15.0	3-Methylhexane
---	Acetylene	6.5	2,2,3-Trimethylpentane
250	Propane	12.0	n-Heptane
16.0	Propene	24.0	Methylcyclohexane
199	i-Butane	3.5	2,4-Dimethylhexane
472	n-Butane	1.0	2,3,4-Trimethylpentane
2.0	1-Butene	28.0	Toluene
7.0	i-Butene	2.0	2,3-Dimethylhexane
6.5	t-2-Butene	5.0	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
177	i-Pentane	6.5	n-Octane
100	n-Pentane	2.5	Ethylcyclohexane
6.0	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	15.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
1.0	Cyclopentene	7.5	o-Xylene
7.0	Cyclopentane	5.0	n-Nonane
7.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
35.5	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
22.0	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
31.0	n-Hexane	2.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
14.5	Methylcyclopentane	1.5	Methylstyrene
4.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
13.5	Benzene	1.0	1,4-Diethylbenzene
11.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	38	2
Σ Aromatic	104	6
Σ Paraffin	1462	91
Acetylene	---	--
	1604	

	ppbC
Total Unidentified Hydrocarbons	128
Total NMHC by summing individual species	1732

TABLE A7. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/25/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
20.0	Ethane	9.5	2,3-Dimethylpentane
(58.0)	Ethylene	13.5	3-Methylhexane
8.5	Acetylene	11.5	2,2,3-Trimethylpentane
62.0	Propane	9.0	n-Heptane
51.5	Propene	27.0	Methylcyclohexane
40.0	i-Butane	5.0	2,4-Dimethylhexane
121	n-Butane	3.0	2,3,4-Trimethylpentane
3.5	1-Butene	36.0	Toluene
2.5	i-Butene	3.0	2,3-Dimethylhexane
3.0	t-2-Butene	8.5	2-Methylheptane
---	c-2-Butene	5.0	3-Ethylhexane
71.5	i-Pentane	5.0	n-Octane
36.0	n-Pentane	2.5	Ethylcyclohexane
3.5	1-Pentene	7.0	Ethylbenzene
---	t-2-Pentene	21.5	p & m-Xylene
---	c-2-Pentene	3.5	Styrene
---	Cyclopentene	9.0	o-Xylene
5.0	Cyclopentane	3.5	n-Nonane
6.5	2,3-Dimethylbutane	9.0	i-Propylbenzene
25.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
17.0	3-Methylpentane	4.5	m-Ethyltoluene
---	1-Hexene	9.0	o-Ethyltoluene
26.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
12.0	Methylcyclopentane	2.0	Methylstyrene
5.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
20.0	Benzene	1.5	1,4-Diethylbenzene
9.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	131	17
Σ Aromatic	125	16
Σ Paraffin	514	66
Acetylene	9	1
	778	

	ppbC
Total Unidentified Hydrocarbons	132
Total NMHC by summing individual species	910

TABLE A8. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/26/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
24.5	Ethane	6.0	2,3-Dimethylpentane
(33.0)	Ethylene	8.0	3-Methylhexane
4.5	Acetylene	8.0	2,2,3-Trimethylpentane
135.	Propane	7.5	n-Heptane
15.5	Propene	8.0	Methylcyclohexane
92.5	i-Butane	2.5	2,4-Dimethylhexane
192.	n-Butane	2.0	2,3,4-Trimethylpentane
5.5	1-Butene	26.5	Toluene
5.5	i-Butene	2.0	2,3-Dimethylhexane
7.5	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
109.	i-Pentane	5.0	n-Octane
51.5	n-Pentane	2.0	Ethylcyclohexane
4.5	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	15.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	6.0	o-Xylene
5.0	Cyclopentane	5.0	n-Nonane
6.0	2,3-Dimethylbutane	2.0	i-Propylbenzene
23.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
13.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
18.5	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
9.0	Methylcyclopentane	1.0	Methylstyrene
4.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
10.0	Benzene	1.5	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	41	5
Σ Aromatic	94	11
Σ Paraffin	752	84
Acetylene	5	1
	892	

	ppbC
Total Unidentified Hydrocarbons	88
Total NMHC by summing individual species	980

TABLE A9. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/27/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	3.0	2,3-Dimethylpentane
(26.0)	Ethylene	4.0	3-Methylhexane
3.0	Acetylene	2.5	2,2,3-Trimethylpentane
8.0	Propane	3.0	n-Heptane
2.0	Propene	11.0	Methylcyclohexane
5.5	i-Butane	1.5	2,4-Dimethylhexane
12.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	26.0	Toluene
---	i-Butene	1.5	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
12.0	i-Pentane	2.5	n-Octane
10.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	9.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.5	o-Xylene
1.0	Cyclopentane	2.0	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
6.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
4.0	3-Methylpentane	1.0	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
7.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.5	Benzene	---	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	3	2
Σ Aromatic	58	32
Σ Paraffin	119	65
Acetylene	3	2
	184	

	ppbC
Total Unidentified Hydrocarbons	30
Total NMHC by summing individual species	214

TABLE A10. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/30/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	3.5	2,3-Dimethylpentane
(9.5)	Ethylene	4.5	3-Methylhexane
7.0	Acetylene	3.5	2,2,3-Trimethylpentane
7.5	Propane	3.0	n-Heptane
3.0	Propene	8.0	Methylcyclohexane
8.5	i-Butane	2.0	2,4-Dimethylhexane
20.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	21.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
20.0	i-Pentane	1.5	n-Octane
13.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	13.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.5	o-Xylene
1.5	Cyclopentane	2.0	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
8.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
6.0	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.5	o-Ethyltoluene
9.0	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	---	Methylstyrene
3.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.0	Benzene	---	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	3	1
Σ Aromatic	70	31
Σ Paraffin	151	67
Acetylene	3	1
	227	

	ppbC
Total Unidentified Hydrocarbons	39
Total NMHC by summing individual species	268

TABLE A11. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 7/31/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
19.0	Ethane	4.0	2,3-Dimethylpentane
(65.0)	Ethylene	7.5	3-Methylhexane
12.5	Acetylene	4.0	2,2,3-Trimethylpentane
34.0	Propane	5.0	n-Heptane
6.0	Propene	5.5	Methylcyclohexane
13.5	i-Butane	2.5	2,4-Dimethylhexane
32.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	39.5	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
27.0	i-Pentane	2.5	n-Octane
19.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	8.0	Ethylbenzene
---	t-2-Pentene	25.5	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	8.5	o-Xylene
2.0	Cyclopentane	3.0	n-Nonane
2.5	2,3-Dimethylbutane	6.5	i-Propylbenzene
10.0	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
6.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
10.0	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	1.0	Methylstyrene
4.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
23.0	Benzene	1.0	1,4-Diethylbenzene
6.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	9	2	Total Unidentified Hydrocarbons	91
Σ Aromatic	139	35		
Σ Paraffin	231	59	Total NMHC by summing individual species	483
Acetylene	13	3		
	392			

TABLE A12. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/1/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
21.5	Ethane	6.5	2,3-Dimethylpentane
(457.)	Ethylene	8.5	3-Methylhexane
5.0	Acetylene	5.5	2,2,3-Trimethylpentane
76.5	Propane	5.5	n-Heptane
13.5	Propene	21.5	Methylcyclohexane
57.5	i-Butane	3.5	2,4-Dimethylhexane
110.	n-Butane	1.0	2,3,4-Trimethylpentane
6.5	1-Butene	33.0	Toluene
8.5	i-Butene	1.5	2,3-Dimethylhexane
6.0	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
64.0	i-Pentane	3.5	n-Octane
34.5	n-Pentane	---	Ethylcyclohexane
5.5	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	18.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
3.0	Cyclopentane	4.5	n-Nonane
4.5	2,3-Dimethylbutane	7.0	i-Propylbenzene
16.5	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.0	p-Ethyltoluene
11.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
15.5	n-Hexane	3.5	1,3,5-Trimethylbenzene
0.5	t-2-Hexene	11.5	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	1.0	Methylstyrene
3.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
11.0	Benzene	1.0	1,4-Diethylbenzene
7.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	40	6
Σ Aromatic	115	17
Σ Paraffin	507	76
Acetylene	5	1
	666	

	ppbC
Total Unidentified Hydrocarbons	98
Total NMHC by summing individual species	764

TABLE A13. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	3.5	2,3-Dimethylpentane
(70.0)	Ethylene	4.5	3-Methylhexane
8.5	Acetylene	2.0	2,2,3-Trimethylpentane
9.0	Propane	4.0	n-Heptane
15.0	Propene	5.0	Methylcyclohexane
31.5	i-Butane	2.0	2,4-Dimethylhexane
---	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	15.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
23.0	c-2-Butene	---	3-Ethylhexane
15.0	i-Pentane	1.5	n-Octane
---	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	8.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
	Cyclopentene	3.0	o-Xylene
	Cyclopentane	1.5	n-Nonane
	2,3-Dimethylbutane	---	i-Propylbenzene
	2-Methylpentane	1.5	n-Propylbenzene
	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
	3-Methylpentane	1.5	m-Ethyltoluene
	1-Hexene	---	o-Ethyltoluene
	n-Hexane	3.5	1,3,5-Trimethylbenzene
	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
	c-2-Hexene	---	1,2,3-Trimethylbenzene
4.0	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.5	Benzene	---	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	9	4	Total Unidentified Hydrocarbons	48
Σ Aromatic	50	23		
Σ Paraffin	151	69	Total NMHC by summing individual species	266
Acetylene	9	4		
	218			

TABLE A14. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/3/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
13.0	Ethane	4.5	2,3-Dimethylpentane
(67.0)	Ethylene	5.0	3-Methylhexane
7.0	Acetylene	3.5	2,2,3-Trimethylpentane
23.0	Propane	4.0	n-Heptane
6.5	Propene	3.5	Methylcyclohexane
16.0	i-Butane	2.5	2,4-Dimethylhexane
34.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	27.5	Toluene
---	i-Butene	2.0	2,3-Dimethylhexane
---	t-2-Butene	4.0	2-Methylheptane
---	c-2-Butene	5.5	3-Ethylhexane
32.0	i-Pentane	4.0	n-Octane
40.0	n-Pentane	2.0	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.0	Cyclopentane	2.0	n-Nonane
2.5	2,3-Dimethylbutane	---	i-Propylbenzene
11.5	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
7.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
15.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	1.0	Methylstyrene
3.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
10.0	Benzene	1.5	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	3
Σ Aromatic	83	24
Σ Paraffin	251	72
Acetylene	7	2
	351	

	ppbC
Total Unidentified Hydrocarbons	55
Total NMHC by summing individual species	407

TABLE A15. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/4/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.0	Ethane	6.8	2,3-Dimethylpentane
(54.0)	Ethylene	7.5	3-Methylhexane
---	Acetylene	6.0	2,2,3-Trimethylpentane
25.5	Propane	6.0	n-Heptane
3.8	Propene	6.8	Methylcyclohexane
22.5	i-Butane	3.0	2,4-Dimethylhexane
18.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	33.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	8.3	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
39.8	i-Pentane	4.5	n-Octane
35.3	n-Pentane	2.3	Ethylcyclohexane
---	1-Pentene	15.8	Ethylbenzene
---	t-2-Pentene	59.3	p & m-Xylene
---	c-2-Pentene	5.3	Styrene
---	Cyclopentene	14.3	o-Xylene
2.3	Cyclopentane	10.5	n-Nonane
4.5	2,3-Dimethylbutane	3.0	i-Propylbenzene
17.3	2-Methylpentane	12.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.3	p-Ethyltoluene
12.0	3-Methylpentane	6.8	m-Ethyltoluene
---	1-Hexene	14.3	o-Ethyltoluene
16.5	n-Hexane	12.8	1,3,5-Trimethylbenzene
---	t-2-Hexene	23.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	9.0	1,2,3-Trimethylbenzene
6.8	Methylcyclopentane	9.0	Methylstyrene
3.0	2,4-Dimethylpentane	20.3	1,3-Diethylbenzene
12.8	Benzene	9.0	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	18	3
Σ Aromatic	252	45
Σ Paraffin	292	52
Acetylene	---	
	562	

	ppbC
Total Unidentified Hydrocarbons	337
Total NMHC by summing individual species	899

TABLE A16. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/5/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.5	Ethane	2.0	2,3-Dimethylpentane
(37.0)	Ethylene	2.0	3-Methylhexane
4.0	Acetylene	3.5	2,2,3-Trimethylpentane
10.0	Propane	2.0	n-Heptane
7.0	Propene	2.0	Methylcyclohexane
15.5	i-Butane	1.0	2,4-Dimethylhexane
15.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	13.5	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
16.5	i-Pentane	2.0	n-Octane
17.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	10.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.5	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
5.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
3.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
5.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	1.0	Methylstyrene
1.0	2,4-Dimethylpentane	2.0	1,3-Diethylbenzene
4.5	Benzene	1.5	1,4-Diethylbenzene
2.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	5
Σ Aromatic	51	26
Σ Paraffin	129	66
Acetylene	4	2
	194	

	ppbC
Total Unidentified Hydrocarbons	11
Total NMHC by summing individual species	205

TABLE A17. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/6/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	2.5	2,3-Dimethylpentane
(52.5)	Ethylene	3.0	3-Methylhexane
2.0	Acetylene	3.0	2,2,3-Trimethylpentane
10.0	Propane	2.5	n-Heptane
3.0	Propene	2.5	Methylcyclohexane
7.0	i-Butane	1.5	2,4-Dimethylhexane
17.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	14.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
16.0	i-Pentane	2.5	n-Octane
14.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	11.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.5	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
7.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
4.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	3.5	o-Ethyltoluene
8.5	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	1.0	Methylstyrene
1.0	2,4-Dimethylpentane	2.5	1,3-Diethylbenzene
5.5	Benzene	0.5	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	5	3	Total Unidentified Hydrocarbons	30
Σ Aromatic	58	29		
Σ Paraffin	132	67	Total NMHC by summing individual species	227
Acetylene	2	1		
	197			

TABLE A18. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/10/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
39.0	Ethane	6.8	2,3-Dimethylpentane
(37.5)	Ethylene	8.3	3-Methylhexane
4.5	Acetylene	6.0	2,2,3-Trimethylpentane
101.	Propane	9.0	n-Heptane
21.8	Propene	9.8	Methylcyclohexane
63.8	i-Butane	1.5	2,4-Dimethylhexane
121.	n-Butane	0.8	2,3,4-Trimethylpentane
3.0	1-Butene	21.8	Toluene
4.5	i-Butene	1.5	2,3-Dimethylhexane
4.5	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	3.8	3-Ethylhexane
78.8	i-Pentane	5.3	n-Octane
51.8	n-Pentane	3.0	Ethylcyclohexane
3.8	1-Pentene	5.3	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	6.8	o-Xylene
4.5	Cyclopentane	6.0	n-Nonane
5.3	2,3-Dimethylbutane	4.5	i-Propylbenzene
22.5	2-Methylpentane	3.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.3	p-Ethyltoluene
15.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
39.8	n-Hexane	5.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	12.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	3.0	1,2,3-Trimethylbenzene
11.3	Methylcyclopentane	4.5	Methylstyrene
3.8	2,4-Dimethylpentane	6.8	1,3-Diethylbenzene
12.0	Benzene	3.0	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	45	6	Total Unidentified Hydrocarbons	144
Σ Aromatic	108	14		
Σ Paraffin	629	80	Total NMHC by summing individual species	930
Acetylene	5	1		
	786			

TABLE A19. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
18.8	Ethane	3.0	2,3-Dimethylpentane
(40.5)	Ethylene	7.5	3-Methylhexane
---	Acetylene	6.0	2,2,3-Trimethylpentane
138.	Propane	6.0	n-Heptane
6.8	Propene	6.8	Methylcyclohexane
35.3	i-Butane	2.3	2,4-Dimethylhexane
73.5	n-Butane	1.5	2,3,4-Trimethylpentane
6.0	1-Butene	38.3	Toluene
6.8	i-Butene	2.3	2,3-Dimethylhexane
3.0	t-2-Butene	3.8	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
53.3	i-Pentane	6.8	n-Octane
25.5	n-Pentane	2.3	Ethylcyclohexane
---	1-Pentene	28.5	Ethylbenzene
---	t-2-Pentene	90.0	p & m-Xylene
---	c-2-Pentene	5.3	Styrene
---	Cyclopentene	27.8	o-Xylene
2.3	Cyclopentane	2.3	n-Nonane
3.8	2,3-Dimethylbutane	0.8	i-Propylbenzene
16.5	2-Methylpentane	6.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	10.5	p-Ethyltoluene
11.3	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
16.5	n-Hexane	15.8	1,3,5-Trimethylbenzene
---	t-2-Hexene	14.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	---	Methylstyrene
6.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
12.8	Benzene	---	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	27	4
Σ Aromatic	252	34
Σ Paraffin	471	63
Acetylene	---	---
	751	

	ppbC
Total Unidentified Hydrocarbons	272
Total NMHC by summing individual species	1023

TABLE A20. HYDROCARBON CONCENTRATIONS IN 0600-0700 FRANKLIN INSTITUTE SAMPLE ON 8/15/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.8	Ethane	1.5	2,3-Dimethylpentane
(26.3)	Ethylene	1.5	3-Methylhexane
3.0	Acetylene	2.3	2,2,3-Trimethylpentane
5.3	Propane	1.5	n-Heptane
1.5	Propene	2.3	Methylcyclohexane
4.5	i-Butane	---	2,4-Dimethylhexane
12.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	9.8	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
11.3	i-Pentane	1.5	n-Octane
9.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.8	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	0.8	Styrene
---	Cyclopentene	4.5	o-Xylene
---	Cyclopentane	2.3	n-Nonane
0.8	2,3-Dimethylbutane	---	i-Propylbenzene
3.8	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
2.3	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	3.8	o-Ethyltoluene
3.8	n-Hexane	9.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.8	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.0	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	6	4
Σ Aromatic	57	40
Σ Paraffin	76	54
Acetylene	3	2
	141	

	ppbC
Total Unidentified Hydrocarbons	143
Total NMHC by summing individual species	284

APPENDIX B

Individual Hydrocarbon Concentrations in 0800-0900 Franklin Institute Samples

TABLE B1. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.3	Ethane	13.5	2,3-Dimethylpentane
(192.)	Ethylene	15.0	3-Methylhexane
17.3	Acetylene	13.5	2,2,3-Trimethylpentane
21.0	Propane	9.8	n-Heptane
12.8	Propene	9.0	Methylcyclohexane
48.0	i-Butane	4.5	2,4-Dimethylhexane
152.	n-Butane	2.3	2,3,4-Trimethylpentane
6.0	1-Butene	47.3	Toluene
1.5	i-Butene	2.3	2,3-Dimethylhexane
6.0	t-2-Butene	6.8	2-Methylheptane
9.0	c-2-Butene	4.5	3-Ethylhexane
129.	i-Pentane	4.5	n-Octane
46.5	n-Pentane	1.5	Ethylcyclohexane
3.8	1-Pentene	9.8	Ethylbenzene
---	t-2-Pentene	26.3	p & m-Xylene
---	c-2-Pentene	3.8	Styrene
0.8	Cyclopentene	13.5	o-Xylene
4.5	Cyclopentane	6.0	n-Nonane
9.0	2,3-Dimethylbutane	2.3	i-Propylbenzene
33.8	2-Methylpentane	6.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.0	p-Ethyltoluene
21.8	3-Methylpentane	5.3	m-Ethyltoluene
---	1-Hexene	12.0	o-Ethyltoluene
26.3	n-Hexane	4.5	1,3,5-Trimethylbenzene
2.3	t-2-Hexene	10.5	1,2,4-Trimethylbenzene
2.3	c-2-Hexene	---	1,2,3-Trimethylbenzene
13.5	Methylcyclopentane	5.3	Methylstyrene
7.5	2,4-Dimethylpentane	3.0	1,3-Diethylbenzene
24.0	Benzene	3.0	1,4-Diethylbenzene
8.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	54	6
Σ Aromatic	174	20
Σ Paraffin	625	72
Acetylene	17	2
	871	

	ppbC
Total Unidentified Hydrocarbons	180
Total NMHC by summing individual species	1051

TABLE B2. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/18/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.0	Ethane	8.5	2,3-Dimethylpentane
(187.)	Ethylene	9.0	3-Methylhexane
23.0	Acetylene	6.0	2,2,3-Trimethylpentane
17.5	Propane	7.0	n-Heptane
14.5	Propene	6.0	Methylcyclohexane
18.0	i-Butane	2.5	2,4-Dimethylhexane
45.0	n-Butane	1.5	2,3,4-Trimethylpentane
3.5	1-Butene	36.0	Toluene
8.0	i-Butene	1.5	2,3-Dimethylhexane
7.5	t-2-Butene	5.0	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
47.0	i-Pentane	3.5	n-Octane
28.5	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	9.5	Ethylbenzene
---	t-2-Pentene	27.5	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	10.5	o-Xylene
3.0	Cyclopentane	3.5	n-Nonane
4.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
19.5	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
11.5	3-Methylpentane	4.5	m-Ethyltoluene
3.0	1-Hexene	12.5	o-Ethyltoluene
16.0	n-Hexane	6.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
8.0	Methylcyclopentane	2.5	Methylstyrene
2.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
16.5	Benzene	1.5	1,4-Diethylbenzene
7.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	70	14
Σ Aromatic	140	28
Σ Paraffin	270	54
Acetylene	23	5
	503	

	ppbC
Total Unidentified Hydrocarbons	136
Total NMHC by summing individual species	639

TABLE B3. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/19/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.0	Ethane	14.0	2,3-Dimethylpentane
(69.0)	Ethylene	16.5	3-Methylhexane
20.0	Acetylene	10.0	2,2,3-Trimethylpentane
15.0	Propane	12.0	n-Heptane
9.0	Propene	18.0	Methylcyclohexane
18.5	i-Butane	4.0	2,4-Dimethylhexane
49.0	n-Butane	---	2,3,4-Trimethylpentane
3.0	1-Butene	57.5	Toluene
7.0	i-Butene	2.5	2,3-Dimethylhexane
6.0	t-2-Butene	7.0	2-Methylheptane
---	c-2-Butene	5.0	3-Ethylhexane
54.5	i-Pentane	4.5	n-Octane
31.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	10.5	Ethylbenzene
---	t-2-Pentene	30.0	p & m-Xylene
---	c-2-Pentene	4.0	Styrene
---	Cyclopentene	12.5	o-Xylene
4.0	Cyclopentane	4.5	n-Nonane
7.0	2,3-Dimethylbutane	3.0	i-Propylbenzene
27.0	2-Methylpentane	6.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.5	p-Ethyltoluene
16.0	3-Methylpentane	5.5	m-Ethyltoluene
4.0	1-Hexene	14.0	o-Ethyltoluene
21.5	n-Hexane	3.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
10.5	Methylcyclopentane	3.0	Methylstyrene
6.0	2,4-Dimethylpentane	2.5	1,3-Diethylbenzene
20.0	Benzene	1.5	1,4-Diethylbenzene
10.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	36	6
Σ Aromatic	188	30
Σ Paraffin	378	61
Acetylene	20	3
	623	

	ppbC
Total Unidentified Hydrocarbons	133
Total NMHC by summing individual species	756

TABLE B4. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/20/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.5	Ethane	12.5	2,3-Dimethylpentane
(80.0)	Ethylene	15.0	3-Methylhexane
17.5	Acetylene	8.5	2,2,3-Trimethylpentane
37.5	Propane	11.5	n-Heptane
10.5	Propene	9.5	Methylcyclohexane
24.0	i-Butane	4.0	2,4-Dimethylhexane
54.5	n-Butane	2.0	2,3,4-Trimethylpentane
3.0	1-Butene	61.0	Toluene
2.5	i-Butene	3.0	2,3-Dimethylhexane
4.5	t-2-Butene	9.0	2-Methylheptane
---	c-2-Butene	6.0	3-Ethylhexane
53.0	i-Pentane	6.0	n-Octane
34.0	n-Pentane	2.0	Ethylcyclohexane
2.0	1-Pentene	12.0	Ethylbenzene
---	t-2-Pentene	35.0	p & m-Xylene
---	c-2-Pentene	4.5	Styrene
0.5	Cyclopentene	14.0	o-Xylene
5.0	Cyclopentane	4.5	n-Nonane
7.0	2,3-Dimethylbutane	6.5	i-Propylbenzene
31.5	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	13.5	p-Ethyltoluene
21.0	3-Methylpentane	5.0	m-Ethyltoluene
---	1-Hexene	14.5	o-Ethyltoluene
28.5	n-Hexane	5.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
13.0	Methylcyclopentane	2.5	Methylstyrene
8.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
24.5	Benzene	1.0	1,4-Diethylbenzene
9.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	32	5
Σ Aromatic	209	30
Σ Paraffin	433	51
Acetylene	18	3
	692	

	ppbC
Total Unidentified Hydrocarbons	139
Total NMHC by summing individual species	831

TABLE B5. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/23/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.3	Ethane	13.5	2,3-Dimethylpentane
(73.5)	Ethylene	15.8	3-Methylhexane
13.5	Acetylene	9.8	2,2,3-Trimethylpentane
27.8	Propane	10.5	n-Heptane
14.3	Propene	9.3	Methylcyclohexane
27.8	i-Butane	4.5	2,4-Dimethylhexane
75.0	n-Butane	2.3	2,3,4-Trimethylpentane
4.5	1-Butene	43.5	Toluene
5.3	i-Butene	2.3	2,3-Dimethylhexane
6.8	t-2-Butene	7.5	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
82.5	i-Pentane	4.5	n-Octane
43.5	n-Pentane	2.3	Ethylcyclohexane
3.0	1-Pentene	9.8	Ethylbenzene
31.5	t-2-Pentene	29.3	p & m-Xylene
19.5	c-2-Pentene	4.5	Styrene
0.8	Cyclopentene	12.8	o-Xylene
5.3	Cyclopentane	6.8	n-Nonane
9.0	2,3-Dimethylbutane	2.3	i-Propylbenzene
36.0	2-Methylpentane	4.5	n-Propylbenzene
0.8	c-4-Methyl-2-pentene	8.3	p-Ethyltoluene
23.3	3-Methylpentane	6.0	m-Ethyltoluene
1.5	1-Hexene	15.0	o-Ethyltoluene
30.8	n-Hexane	4.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	14.3	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	3.0	1,2,3-Trimethylbenzene
15.0	Methylcyclopentane	3.8	Methylstyrene
6.8	2,4-Dimethylpentane	3.0	1,3-Diethylbenzene
21.0	Benzene	2.3	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	55	7
Σ Aromatic	177	23
Σ Paraffin	518	62
Acetylene	14	2
	774	

	ppbC
Total Unidentified Hydrocarbons	211
Total NMHC by summing individual species	975

TABLE B6. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/24/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
36.0	Ethane	12.0	2,3-Dimethylpentane
(64.0)	Ethylene	15.8	3-Methylhexane
9.0	Acetylene	7.5	2,2,3-Trimethylpentane
152.	Propane	12.0	n-Heptane
21.8	Propene	15.0	Methylcyclohexane
96.8	i-Butane	3.8	2,4-Dimethylhexane
203.	n-Butane	2.3	2,3,4-Trimethylpentane
6.8	1-Butene	42.0	Toluene
6.8	i-Butene	2.3	2,3-Dimethylhexane
8.3	t-2-Butene	5.3	2-Methylheptane
3.8	c-2-Butene	6.0	3-Ethylhexane
113.	i-Pentane	6.8	n-Octane
69.0	n-Pentane	3.8	Ethylcyclohexane
---	1-Pentene	9.8	Ethylbenzene
---	t-2-Pentene	26.3	p & m-Xylene
---	c-2-Pentene	4.5	Styrene
4.5	Cyclopentene	12.0	o-Xylene
5.3	Cyclopentane	6.0	n-Nonane
8.3	2,3-Dimethylbutane	3.0	i-Propylbenzene
35.0	2-Methylpentane	2.3	n-Propylbenzene
0.8	c-4-Methyl-2-pentene	6.0	p-Ethyltoluene
24.0	3-Methylpentane	4.5	m-Ethyltoluene
0.8	1-Hexene	11.3	o-Ethyltoluene
39.8	n-Hexane	2.3	1,3,5-Trimethylbenzene
0.8	t-2-Hexene	10.5	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	2.3	1,2,3-Trimethylbenzene
17.3	Methylcyclopentane	3.0	Methylstyrene
5.3	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
21.0	Benzene	1.5	1,4-Diethylbenzene
10.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	63	6
Σ Aromatic	157	14
Σ Paraffin	915	80
Acetylene	9	1
	1144	

	ppbC
Total Unidentified Hydrocarbons	193
Total NMHC by summing individual species	1337

TABLE B7. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/25/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
19.5	Ethane	8.3	2,3-Dimethylpentane
(59.3)	Ethylene	10.5	3-Methylhexane
7.5	Acetylene	7.5	2,2,3-Trimethylpentane
128.	Propane	7.5	n-Heptane
12.8	Propene	8.3	Methylcyclohexane
44.3	i-Butane	3.0	2,4-Dimethylhexane
90.0	n-Butane	1.5	2,3,4-Trimethylpentane
5.3	1-Butene	41.3	Toluene
5.3	i-Butene	1.5	2,3-Dimethylhexane
7.5	t-2-Butene	6.8	2-Methylheptane
---	c-2-Butene	3.8	3-Ethylhexane
71.3	i-Pentane	4.5	n-Octane
36.8	n-Pentane	2.3	Ethylcyclohexane
4.5	1-Pentene	8.3	Ethylbenzene
---	t-2-Pentene	24.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	9.8	o-Xylene
3.8	Cyclopentane	3.8	n-Nonane
6.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
24.8	2-Methylpentane	4.5	n-Propylbenzene
0.8	c-4-Methyl-2-pentene	5.3	p-Ethyltoluene
18.0	3-Methylpentane	3.8	m-Ethyltoluene
3.0	1-Hexene	10.5	o-Ethyltoluene
28.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
0.8	c-2-Hexene	2.3	1,2,3-Trimethylbenzene
11.3	Methylcyclopentane	2.3	Methylstyrene
4.5	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
18.8	Benzene	2.3	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	47	6
Σ Aromatic	147	19
Σ Paraffin	567	74
Acetylene	8	1
	768	

	ppbC
Total Unidentified Hydrocarbons	117
Total NMHC by summing individual species	885

TABLE B8. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/26/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
13.5	Ethane	6.8	2,3-Dimethylpentane
(40.5)	Ethylene	9.0	3-Methylhexane
12.8	Acetylene	5.3	2,2,3-Trimethylpentane
138.	Propane	6.0	n-Heptane
9.8	Propene	6.0	Methylcyclohexane
45.0	i-Butane	2.3	2,4-Dimethylhexane
86.3	n-Butane	1.5	2,3,4-Trimethylpentane
5.3	1-Butene	30.0	Toluene
5.3	i-Butene	1.5	2,3-Dimethylhexane
11.3	t-2-Butene	5.3	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
62.3	i-Pentane	3.8	n-Octane
34.5	n-Pentane	2.3	Ethylcyclohexane
6.0	1-Pentene	8.3	Ethylbenzene
---	t-2-Pentene	21.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	9.0	o-Xylene
3.0	Cyclopentane	4.5	n-Nonane
4.5	2,3-Dimethylbutane	5.3	i-Propylbenzene
20.3	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	9.0	p-Ethyltoluene
12.8	3-Methylpentane	4.5	m-Ethyltoluene
1.5	1-Hexene	9.8	o-Ethyltoluene
16.5	n-Hexane	4.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	9.8	1,2,4-Trimethylbenzene
0.8	c-2-Hexene	2.3	1,2,3-Trimethylbenzene
8.3	Methylcyclopentane	2.3	Methylstyrene
4.5	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
15.0	Benzene	1.5	1,4-Diethylbenzene
6.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	46	6
Σ Aromatic	137	19
Σ Paraffin	513	72
Acetylene	13	2
	709	

	ppbC
Total Unidentified Hydrocarbons	109
Total NMHC by summing individual species	818

TABLE B9. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/27/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	6.8	2,3-Dimethylpentane
(44.3)	Ethylene	8.3	3-Methylhexane
12.0	Acetylene	5.3	2,2,3-Trimethylpentane
9.0	Propane	6.0	n-Heptane
6.8	Propene	8.3	Methylcyclohexane
11.3	i-Butane	2.3	2,4-Dimethylhexane
30.8	n-Butane	---	2,3,4-Trimethylpentane
2.3	1-Butene	27.8	Toluene
2.3	i-Butene	1.5	2,3-Dimethylhexane
3.0	t-2-Butene	3.8	2-Methylheptane
---	c-2-Butene	3.8	3-Ethylhexane
35.3	i-Pentane	3.0	n-Octane
22.5	n-Pentane	0.8	Ethylcyclohexane
1.5	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	2.3	Styrene
---	Cyclopentene	7.5	o-Xylene
2.3	Cyclopentane	2.3	n-Nonane
3.8	2,3-Dimethylbutane	---	i-Propylbenzene
15.8	2-Methylpentane	2.3	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.8	p-Ethyltoluene
10.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	8.3	o-Ethyltoluene
14.3	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	---	Methylstyrene
3.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
13.5	Benzene	---	1,4-Diethylbenzene
6.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	19	5	Total Unidentified Hydrocarbons	49
Σ Aromatic	94	26		
Σ Paraffin	232	65	Total NMHC by summing individual species	405
Acetylene	12	3		
	356			

TABLE B10. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/30/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.5	Ethane	9.0	2,3-Dimethylpentane
(63.5)	Ethylene	10.0	3-Methylhexane
18.5	Acetylene	7.5	2,2,3-Trimethylpentane
18.5	Propane	8.5	n-Heptane
9.0	Propene	5.5	Methylcyclohexane
18.0	i-Butane	3.5	2,4-Dimethylhexane
48.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	39.0	Toluene
---	i-Butene	2.0	2,3-Dimethylhexane
---	t-2-Butene	6.5	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
52.0	i-Pentane	4.0	n-Octane
33.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	9.0	Ethylbenzene
---	t-2-Pentene	25.0	p & m-Xylene
---	c-2-Pentene	3.5	Styrene
---	Cyclopentene	11.0	o-Xylene
3.5	Cyclopentane	4.0	n-Nonane
4.5	2,3-Dimethylbutane	2.5	i-Propylbenzene
22.5	2-Methylpentane	8.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.0	p-Ethyltoluene
14.5	3-Methylpentane	5.5	m-Ethyltoluene
---	1-Hexene	13.4	o-Ethyltoluene
19.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
8.5	Methylcyclopentane	3.5	Methylstyrene
2.5	2,4-Dimethylpentane	2.5	1,3-Diethylbenzene
15.0	Benzene	1.5	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	16	3	Total Unidentified Hydrocarbons	108
Σ Aromatic	152	30		
Σ Paraffin	328	64	Total NMHC by summing individual species	622
Acetylene	3	1		
	514			

TABLE B11. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 7/31/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.0	Ethane	11.0	2,3-Dimethylpentane
(61.5)	Ethylene	17.0	3-Methylhexane
17.0	Acetylene	7.0	2,2,3-Trimethylpentane
44.0	Propane	---	n-Heptane
12.0	Propene	10.0	Methylcyclohexane
26.0	i-Butane	4.0	2,4-Dimethylhexane
65.0	n-Butane	7.0	2,3,4-Trimethylpentane
7.0	1-Butene	61.0	Toluene
7.5	i-Butene	2.5	2,3-Dimethylhexane
3.5	t-2-Butene	6.5	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
62.0	i-Pentane	4.0	n-Octane
40.0	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	11.0	Ethylbenzene
---	t-2-Pentene	33.0	p & m-Xylene
---	c-2-Pentene	4.0	Styrene
---	Cyclopentene	13.0	o-Xylene
4.0	Cyclopentane	4.5	n-Nonane
5.5	2,3-Dimethylbutane	4.0	i-Propylbenzene
24.5	2-Methylpentane	4.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	11.5	p-Ethyltoluene
16.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	14.5	o-Ethyltoluene
21.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	8.5	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
9.5	Methylcyclopentane	---	Methylstyrene
6.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
21.0	Benzene	---	1,4-Diethylbenzene
9.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	35	5
Σ Aromatic	178	27
Σ Paraffin	428	65
Acetylene	17	3
	658	

	ppbC
Total Unidentified Hydrocarbons	136
Total NMHC by summing individual species	794

TABLE B12. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/1/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
36.5	Ethane	10.5	2,3-Dimethylpentane
(77.0)	Ethylene	12.5	3-Methylhexane
9.0	Acetylene	7.0	2,2,3-Trimethylpentane
219.	Propane	9.5	n-Heptane
24.5	Propene	10.5	Methylcyclohexane
80.0	i-Butane	4.0	2,4-Dimethylhexane
144.	n-Butane	1.5	2,3,4-Trimethylpentane
8.5	1-Butene	43.5	Toluene
10.5	i-Butene	2.5	2,3-Dimethylhexane
5.5	t-2-Butene	4.0	2-Methylheptane
---	c-2-Butene	5.0	3-Ethylhexane
93.5	i-Pentane	6.0	n-Octane
54.5	n-Pentane	2.5	Ethylcyclohexane
---	1-Pentene	9.0	Ethylbenzene
---	t-2-Pentene	26.5	p & m-Xylene
---	c-2-Pentene	4.0	Styrene
0.5	Cyclopentene	10.5	o-Xylene
4.5	Cyclopentane	4.5	n-Nonane
7.5	2,3-Dimethylbutane	2.5	i-Propylbenzene
32.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
23.0	3-Methylpentane	4.5	m-Ethyltoluene
---	1-Hexene	11.5	o-Ethyltoluene
31.5	n-Hexane	3.5	1,3,5-Trimethylbenzene
2.0	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	---	1,2,3-Trimethylbenzene
14.0	Methylcyclopentane	---	Methylstyrene
5.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
17.5	Benzene	---	1,4-Diethylbenzene
8.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	57	5
Σ Aromatic	152	15
Σ Paraffin	829	79
Acetylene	9	1
	1047	

	ppbC
Total Unidentified Hydrocarbons	159
Total NMHC by summing individual species	1206

TABLE B13. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.0	Ethane	5.5	2,3-Dimethylpentane
(63.5)	Ethylene	6.0	3-Methylhexane
7.5	Acetylene	4.5	2,2,3-Trimethylpentane
23.0	Propane	5.5	n-Heptane
9.5	Propene	4.0	Methylcyclohexane
20.5	i-Butane	2.5	2,4-Dimethylhexane
44.5	n-Butane	---	2,3,4-Trimethylpentane
3.5	1-Butene	23.0	Toluene
4.0	i-Butene	1.0	2,3-Dimethylhexane
2.5	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
43.5	i-Pentane	3.0	n-Octane
32.0	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	14.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	7.0	o-Xylene
2.5	Cyclopentane	6.0	n-Nonane
3.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
16.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
10.0	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	8.5	o-Ethyltoluene
13.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	13.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	4.0	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	3.0	Methylstyrene
2.5	2,4-Dimethylpentane	2.5	1,3-Diethylbenzene
10.0	Benzene	1.5	1,4-Diethylbenzene
5.6	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	25	6
Σ Aromatic	104	25
Σ Paraffin	276	67
Acetylene	8	2
	413	

	ppbC
Total Unidentified Hydrocarbons	133
Total NMHC by summing individual species	546

TABLE B14. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/3/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
16.0	Ethane	13.5	2,3-Dimethylpentane
(118.)	Ethylene	15.0	3-Methylhexane
27.0	Acetylene	8.5	2,2,3-Trimethylpentane
27.5	Propane	11.5	n-Heptane
14.0	Propene	9.0	Methylcyclohexane
35.0	i-Butane	5.5	2,4-Dimethylhexane
90.5	n-Butane	2.0	2,3,4-Trimethylpentane
5.0	1-Butene	56.0	Toluene
6.0	i-Butene	3.5	2,3-Dimethylhexane
2.5	t-2-Butene	14.0	2-Methylheptane
---	c-2-Butene	10.5	3-Ethylhexane
86.5	i-Pentane	7.5	n-Octane
67.5	n-Pentane	3.0	Ethylcyclohexane
3.0	1-Pentene	11.5	Ethylbenzene
---	t-2-Pentene	34.0	p & m-Xylene
---	c-2-Pentene	5.5	Styrene
---	Cyclopentene	15.5	o-Xylene
5.0	Cyclopentane	5.0	n-Nonane
7.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
32.5	2-Methylpentane	5.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	8.0	p-Ethyltoluene
22.0	3-Methylpentane	7.0	m-Ethyltoluene
---	1-Hexene	17.5	o-Ethyltoluene
29.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
2.0	t-2-Hexene	11.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
13.5	Methylcyclopentane	4.0	Methylstyrene
10.5	2,4-Dimethylpentane	2.0	1,3-Diethylbenzene
22.0	Benzene	1.0	1,4-Diethylbenzene
9.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	42	5
Σ Aromatic	200	24
Σ Paraffin	560	68
Acetylene	27	3
	829	

	ppbC
Total Unidentified Hydrocarbons	331
Total NMHC by summing individual species	1160

TABLE B15. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/4/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
14.0	Ethane	10.0	2,3-Dimethylpentane
(56.0)	Ethylene	10.5	3-Methylhexane
13.0	Acetylene	9.0	2,2,3-Trimethylpentane
23.5	Propane	8.5	n-Heptane
7.5	Propene	7.0	Methylcyclohexane
45.0	i-Butane	4.0	2,4-Dimethylhexane
129.	n-Butane	2.0	2,3,4-Trimethylpentane
5.0	1-Butene	43.0	Toluene
7.5	i-Butene	2.5	2,3-Dimethylhexane
5.5	t-2-Butene	7.5	2-Methylheptane
---	c-2-Butene	5.5	3-Ethylhexane
97.5	i-Pentane	4.5	n-Octane
52.5	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	14.5	Ethylbenzene
---	t-2-Pentene	53.5	p & m-Xylene
---	c-2-Pentene	4.5	Styrene
---	Cyclopentene	14.0	o-Xylene
4.5	Cyclopentane	7.0	n-Nonane
7.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
28.0	2-Methylpentane	6.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	11.0	p-Ethyltoluene
18.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	12.0	o-Ethyltoluene
23.5	n-Hexane	9.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	16.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	3.5	1,2,3-Trimethylbenzene
10.0	Methylcyclopentane	6.5	Methylstyrene
6.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
18.5	Benzene	5.5	1,4-Diethylbenzene
8.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	37	5	Total Unidentified Hydrocarbons	202
Σ Aromatic	209	26		
Σ Paraffin	536	68	Total NMHC by summing individual species	996
Acetylene	13	2		
	794			

TABLE B16. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/5/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	2.5	2,3-Dimethylpentane
(44.5)	Ethylene	3.0	3-Methylhexane
4.5	Acetylene	2.5	2,2,3-Trimethylpentane
13.0	Propane	2.5	n-Heptane
3.0	Propene	2.5	Methylcyclohexane
8.0	i-Butane	1.5	2,4-Dimethylhexane
17.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	16.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
16.0	i-Pentane	2.5	n-Octane
20.0	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	11.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.0	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
7.0	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
4.0	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	4.0	o-Ethyltoluene
7.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	1.0	Methylstyrene
2.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
5.5	Benzene	1.0	1,4-Diethylbenzene
4.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	4	2
Σ Aromatic	61	29
Σ Paraffin	140	67
Acetylene	5	2
	209	

	ppbC
Total Unidentified Hydrocarbons	37
Total NMHC by summing individual species	246

TABLE B17. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/6/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.0	Ethane	9.0	2,3-Dimethylpentane
(79.0)	Ethylene	10.0	3-Methylhexane
---	Acetylene	6.5	2,2,3-Trimethylpentane
26.5	Propane	8.5	n-Heptane
12.0	Propene	6.0	Methylcyclohexane
15.5	i-Butane	3.5	2,4-Dimethylhexane
47.0	n-Butane	1.5	2,3,4-Trimethylpentane
4.5	1-Butene	34.0	Toluene
7.0	i-Butene	2.0	2,3-Dimethylhexane
1.5	t-2-Butene	7.0	2-Methylheptane
---	c-2-Butene	5.0	3-Ethylhexane
58.5	i-Pentane	5.0	n-Octane
38.5	n-Pentane	1.5	Ethylcyclohexane
6.5	1-Pentene	8.5	Ethylbenzene
---	t-2-Pentene	24.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	9.5	o-Xylene
3.5	Cyclopentane	3.0	n-Nonane
5.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
23.5	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
16.0	3-Methylpentane	4.5	m-Ethyltoluene
---	1-Hexene	12.0	o-Ethyltoluene
21.0	n-Hexane	2.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	6.5	1,2,4-Trimethylbenzene
2.0	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
9.0	Methylcyclopentane	3.0	Methylstyrene
4.0	2,4-Dimethylpentane	2.0	1,3-Diethylbenzene
15.5	Benzene	1.5	1,4-Diethylbenzene
7.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	46	9
Σ Aromatic	132	25
Σ Paraffin	354	67
Acetylene	---	--
	532	

	ppbC
Total Unidentified Hydrocarbons	82
Total NMHC by summing individual species	614

TABLE B18. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/7/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.0	Ethane	10.5	2,3-Dimethylpentane
(70.5)	Ethylene	12.0	3-Methylhexane
18.5	Acetylene	7.0	2,2,3-Trimethylpentane
16.0	Propane	9.5	n-Heptane
12.5	Propene	9.0	Methylcyclohexane
30.5	i-Butane	3.0	2,4-Dimethylhexane
76.5	n-Butane	1.5	2,3,4-Trimethylpentane
6.0	1-Butene	44.0	Toluene
7.0	i-Butene	2.5	2,3-Dimethylhexane
4.0	t-2-Butene	8.5	2-Methylheptane
---	c-2-Butene	6.5	3-Ethylhexane
76.0	i-Pentane	6.5	n-Octane
42.5	n-Pentane	2.0	Ethylcyclohexane
---	1-Pentene	14.0	Ethylbenzene
---	t-2-Pentene	51.0	p & m-Xylene
---	c-2-Pentene	5.0	Styrene
---	Cyclopentene	15.5	o-Xylene
4.0	Cyclopentane	9.0	n-Nonane
6.0	2,3-Dimethylbutane	3.0	i-Propylbenzene
28.0	2-Methylpentane	6.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.5	p-Ethyltoluene
17.5	3-Methylpentane	7.0	m-Ethyltoluene
---	1-Hexene	15.0	o-Ethyltoluene
19.5	n-Hexane	10.0	1,3,5-Trimethylbenzene
1.0	t-2-Hexene	21.5	1,2,4-Trimethylbenzene
2.0	c-2-Hexene	4.0	1,2,3-Trimethylbenzene
10.5	Methylcyclopentane	6.5	Methylstyrene
8.0	2,4-Dimethylpentane	15.5	1,3-Diethylbenzene
17.0	Benzene	6.0	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	44	6
Σ Aromatic	236	32
Σ Paraffin	439	60
Acetylene	19	3
	737	

	ppbC
Total Unidentified Hydrocarbons	212
Total NMHC by summing individual species	949

TABLE B19. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/10/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.0	Ethane	6.8	2,3-Dimethylpentane
(48.8)	Ethylene	7.5	3-Methylhexane
9.0	Acetylene	6.0	2,2,3-Trimethylpentane
146.	Propane	6.8	n-Heptane
9.8	Propene	5.3	Methylcyclohexane
41.3	i-Butane	3.0	2,4-Dimethylhexane
81.0	n-Butane	1.5	2,3,4-Trimethylpentane
3.0	1-Butene	24.0	Toluene
5.3	i-Butene	1.5	2,3-Dimethylhexane
6.0	t-2-Butene	5.3	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
60.0	i-Pentane	3.8	n-Octane
34.5	n-Pentane	1.5	Ethylcyclohexane
3.8	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
0.8	Cyclopentene	7.5	o-Xylene
3.0	Cyclopentane	5.3	n-Nonane
4.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
19.5	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
12.0	3-Methylpentane	3.8	m-Ethyltoluene
1.5	1-Hexene	7.5	o-Ethyltoluene
15.8	n-Hexane	6.0	1,3,5-Trimethylbenzene
0.8	t-2-Hexene	12.0	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	3.0	Methylstyrene
4.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
12.8	Benzene	---	1,4-Diethylbenzene
6.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	25	5
Σ Aromatic	107	16
Σ Paraffin	509	77
Acetylene	9	1
	660	

	ppbC
Total Unidentified Hydrocarbons	117
Total NMHC by summing individual species	777

TABLE B20. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
31.5	Ethane	11.3	2,3-Dimethylpentane
(59.3)	Ethylene	12.8	3-Methylhexane
15.0	Acetylene	8.3	2,2,3-Trimethylpentane
186.	Propane	10.5	n-Heptane
19.5	Propene	10.5	Methylcyclohexane
51.8	i-Butane	3.0	2,4-Dimethylhexane
103.	n-Butane	2.3	2,3,4-Trimethylpentane
3.0	1-Butene	52.5	Toluene
5.3	i-Butene	2.3	2,3-Dimethylhexane
7.5	t-2-Butene	4.5	2-Methylheptane
3.8	c-2-Butene	5.3	3-Ethylhexane
85.5	i-Pentane	7.5	n-Octane
48.0	n-Pentane	3.8	Ethylcyclohexane
6.0	1-Pentene	16.5	Ethylbenzene
2.3	t-2-Pentene	48.0	p & m-Xylene
---	c-2-Pentene	5.3	Styrene
---	Cyclopentene	18.8	o-Xylene
4.5	Cyclopentane	10.5	n-Nonane
6.8	2,3-Dimethylbutane	2.3	i-Propylbenzene
33.0	2-Methylpentane	8.3	n-Propylbenzene
---	c-4-Methyl-2-pentene	12.8	p-Ethyltoluene
22.5	3-Methylpentane	3.8	m-Ethyltoluene
---	1-Hexene	15.0	o-Ethyltoluene
50.3	n-Hexane	31.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	26.3	1,2,4-Trimethylbenzene
0.8	c-2-Hexene	5.3	1,2,3-Trimethylbenzene
15.8	Methylcyclopentane	13.5	Methylstyrene
8.3	2,4-Dimethylpentane	20.3	1,3-Diethylbenzene
21.0	Benzene	12.8	1,4-Diethylbenzene
8.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	64	6
Σ Aromatic	295	27
Σ Paraffin	738	66
Acetylene	15	1
	1111	

	ppbC
Total Unidentified Hydrocarbons	298
Total NMHC by summing individual species	1409

TABLE B21. HYDROCARBON CONCENTRATIONS IN 0800-0900 FRANKLIN INSTITUTE SAMPLE ON 8/15/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	3.8	2,3-Dimethylpentane
(34.5)	Ethylene	4.5	3-Methylhexane
8.3	Acetylene	4.5	2,2,3-Trimethylpentane
11.3	Propane	3.8	n-Heptane
6.8	Propene	3.8	Methylcyclohexane
11.3	i-Butane	1.5	2,4-Dimethylhexane
29.3	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	18.0	Toluene
---	i-Butene	0.8	2,3-Dimethylhexane
---	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.3	3-Ethylhexane
29.3	i-Pentane	2.3	n-Octane
20.3	n-Pentane	---	Ethylcyclohexane
2.3	1-Pentene	6.8	Ethylbenzene
4.5	t-2-Pentene	23.3	p & m-Xylene
---	c-2-Pentene	2.3	Styrene
---	Cyclopentene	7.5	o-Xylene
1.5	Cyclopentane	3.0	n-Nonane
2.3	2,3-Dimethylbutane	---	i-Propylbenzene
11.3	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	6.0	p-Ethyltoluene
6.8	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	9.8	o-Ethyltoluene
9.0	n-Hexane	17.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	12.8	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	7.5	Methylstyrene
2.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
7.5	Benzene	---	1,4-Diethylbenzene
3.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	23	7	Total Unidentified Hydrocarbons	164
Σ Aromatic	98	31		
Σ Paraffin	184	59	Total NMHC by summing individual species	476
Acetylene	8	3		
	312			

APPENDIX C

Individual Hydrocarbon Concentrations in 0600-0700 Industrial Site Samples

TABLE C1. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
14.3	Ethane	45.0	2,3-Dimethylpentane
(404.)	Ethylene	78.8	3-Methylhexane
27.8	Acetylene	23.3	2,2,3-Trimethylpentane
32.3	Propane	24.8	n-Heptane
15.8	Propene	239.	Methylcyclohexane
28.5	i-Butane	18.8	2,4-Dimethylhexane
60.8	n-Butane	---	2,3,4-Trimethylpentane
6.8	1-Butene	62.3	Toluene
3.0	i-Butene	7.5	2,3-Dimethylhexane
9.0	t-2-Butene	12.0	2-Methylheptane
---	c-2-Butene	9.0	3-Ethylhexane
56.3	i-Pentane	3.8	n-Octane
35.3	n-Pentane	2.3	Ethylcyclohexane
---	1-Pentene	8.3	Ethylbenzene
---	t-2-Pentene	15.8	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.8	o-Xylene
2.3	Cyclopentane	5.3	n-Nonane
5.3	2,3-Dimethylbutane	5.3	i-Propylbenzene
21.0	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.8	p-Ethyltoluene
14.5	3-Methylpentane	4.5	m-Ethyltoluene
12.0	1-Hexene	6.8	o-Ethyltoluene
22.5	n-Hexane	8.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.3	1,2,4-Trimethylbenzene
2.3	c-2-Hexene	---	1,2,3-Trimethylbenzene
11.3	Methylcyclopentane	---	Methylstyrene
11.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
17.3	Benzene	---	1,4-Diethylbenzene
33.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	54	5
Σ Aromatic	139	13
Σ Paraffin	817	79
Acetylene	28	3
	1034	

	ppbC
Total Unidentified Hydrocarbons	477
Total NMHC by summing individual species	1511

TABLE C2. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/18/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.0	Ethane	8.0	2,3-Dimethylpentane
(170.)	Ethylene	9.5	3-Methylhexane
7.5	Acetylene	8.0	2,2,3-Trimethylpentane
12.0	Propane	6.5	n-Heptane
4.0	Propene	8.5	Methylcyclohexane
15.5	i-Butane	3.5	2,4-Dimethylhexane
48.0	n-Butane	---	2,3,4-Trimethylpentane
3.5	1-Butene	32.5	Toluene
2.5	i-Butene	2.0	2,3-Dimethylhexane
2.0	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
53.0	i-Pentane	2.0	n-Octane
29.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	13.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	7.0	o-Xylene
3.0	Cyclopentane	3.5	n-Nonane
5.5	2,3-Dimethylbutane	---	i-Propylbenzene
19.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
12.5	3-Methylpentane	7.0	m-Ethyltoluene
5.5	1-Hexene	7.0	o-Ethyltoluene
17.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	5.5	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	3.0	1,2,3-Trimethylbenzene
6.5	Methylcyclopentane	1.5	Methylstyrene
4.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
8.5	Benzene	1.5	1,4-Diethylbenzene
3.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	25	6
Σ Aromatic	108	25
Σ Paraffin	293	68
Acetylene	8	2
	434	

	ppbC
Total Unidentified Hydrocarbons	86
Total NMHC by summing individual species	520

TABLE C3. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/19/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	6.5	2,3-Dimethylpentane
(234.)	Ethylene	8.5	3-Methylhexane
9.0	Acetylene	5.0	2,2,3-Trimethylpentane
16.0	Propane	6.0	n-Heptane
6.0	Propene	6.5	Methylcyclohexane
12.0	i-Butane	2.0	2,4-Dimethylhexane
24.5	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	39.0	Toluene
1.0	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
27.0	i-Pentane	2.5	n-Octane
15.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	15.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	7.0	o-Xylene
2.0	Cyclopentane	2.5	n-Nonane
4.5	2,3-Dimethylbutane	13.5	i-Propylbenzene
16.0	2-Methylpentane	4.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
11.0	3-Methylpentane	2.5	m-Ethyltoluene
5.0	1-Hexene	6.0	o-Ethyltoluene
17.0	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
6.5	Methylcyclopentane	1.5	Methylstyrene
4.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
13.0	Benzene	1.0	1,4-Diethylbenzene
4.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	18	5
Σ Aromatic	122	32
Σ Paraffin	227	60
Acetylene	9	2
	376	

	ppbC
Total Unidentified Hydrocarbons	72
Total NMHC by summing individual species	448

TABLE C4 . HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/20/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
21.5	Ethane	7.5	2,3-Dimethylpentane
(21.5)	Ethylene	11.5	3-Methylhexane
8.0	Acetylene	4.5	2,2,3-Trimethylpentane
15.0	Propane	7.0	n-Heptane
11.0	Propene	19.0	Methylcyclohexane
11.0	i-Butane	3.0	2,4-Dimethylhexane
28.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	45.0	Toluene
---	i-Butene	1.5	2,3-Dimethylhexane
---	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
31.5	i-Pentane	3.0	n-Octane
21.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	16.5	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	7.5	o-Xylene
2.0	Cyclopentane	6.5	n-Nonane
3.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
14.0	2-Methylpentane	7.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
9.5	3-Methylpentane	5.0	m-Ethyltoluene
---	1-Hexene	9.5	o-Ethyltoluene
20.0	n-Hexane	5.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	19.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	5.5	1,2,3-Trimethylbenzene
6.5	Methylcyclopentane	2.5	Methylstyrene
4.0	2,4-Dimethylpentane	2.5	1,3-Diethylbenzene
7.5	Benzene	3.5	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	16	4
Σ Aromatic	145	34
Σ Paraffin	261	61
Acetylene	8	2
	430	

	ppbC
Total Unidentified Hydrocarbons	145
Total NMHC by summing individual species	575

TABLE C5 . HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/23/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
13.5	Ethane	3.5	2,3-Dimethylpentane
(146.)	Ethylene	5.0	3-Methylhexane
11.0	Acetylene	---	2,2,3-Trimethylpentane
38.5	Propane	4.5	n-Heptane
31.0	Propene	5.5	Methylcyclohexane
13.0	i-Butane	1.0	2,4-Dimethylhexane
41.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	25.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
17.0	i-Pentane	2.5	n-Octane
11.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	12.5	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	5.5	o-Xylene
1.5	Cyclopentane	12.0	n-Nonane
3.5	2,3-Dimethylbutane	2.5	i-Propylbenzene
14.5	2-Methylpentane	11.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
11.0	3-Methylpentane	6.0	m-Ethyltoluene
2.5	1-Hexene	22.5	o-Ethyltoluene
23.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
9.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.5	Benzene	---	1,4-Diethylbenzene
2.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	36	9
Σ Aromatic	105	27
Σ Paraffin	239	61
Acetylene	11	3
	392	

	ppbC
Total Unidentified Hydrocarbons	183
Total NMHC by summing individual species	575

TABLE C6. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/24/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.5	Ethane	41.5	2,3-Dimethylpentane
(82.0)	Ethylene	36.5	3-Methylhexane
1.0	Acetylene	10.0	2,2,3-Trimethylpentane
30.0	Propane	37.0	n-Heptane
30.0	Propene	36.5	Methylcyclohexane
32.5	i-Butane	7.0	2,4-Dimethylhexane
86.0	n-Butane	---	2,3,4-Trimethylpentane
7.5	1-Butene	80.0	Toluene
8.0	i-Butene	5.0	2,3-Dimethylhexane
10.5	t-2-Butene	13.5	2-Methylheptane
---	c-2-Butene	12.5	3-Ethylhexane
149.	i-Pentane	14.5	n-Octane
60.0	n-Pentane	5.5	Ethylcyclohexane
15.5	1-Pentene	8.5	Ethylbenzene
---	t-2-Pentene	24.0	p & m-Xylene
---	c-2-Pentene	8.0	Styrene
4.5	Cyclopentene	12.5	o-Xylene
13.0	Cyclopentane	11.0	n-Nonane
21.5	2,3-Dimethylbutane	2.5	i-Propylbenzene
104.	2-Methylpentane	7.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
69.0	3-Methylpentane	8.0	m-Ethyltoluene
---	1-Hexene	8.5	o-Ethyltoluene
61.0	n-Hexane	3.0	1,3,5-Trimethylbenzene
16.5	t-2-Hexene	12.5	1,2,4-Trimethylbenzene
22.5	c-2-Hexene	3.0	1,2,3-Trimethylbenzene
49.0	Methylcyclopentane	2.5	Methylstyrene
18.0	2,4-Dimethylpentane	2.0	1,3-Diethylbenzene
105.	Benzene	2.0	1,4-Diethylbenzene
16.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	126	9
Σ Aromatic	282	20
Σ Paraffin	1009	71
Acetylene	1	--
	1419	

	ppbC
Total Unidentified Hydrocarbons	281
Total NMHC by summing individual species	1710

TABLE C7. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/25/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	5.0	2,3-Dimethylpentane
(66.0)	Ethylene	7.5	3-Methylhexane
2.5	Acetylene	---	2,2,3-Trimethylpentane
19.5	Propane	4.5	n-Heptane
21.5	Propene	14.5	Methylcyclohexane
13.5	i-Butane	2.0	2,4-Dimethylhexane
42.0	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	28.0	Toluene
1.5	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
25.0	i-Pentane	2.0	n-Octane
18.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	12.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	5.0	o-Xylene
1.5	Cyclopentane	4.0	n-Nonane
3.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
12.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
10.0	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
16.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
6.5	Methylcyclopentane	1.0	Methylstyrene
6.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
9.5	Benzene	1.0	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	29	7
Σ Aromatic	87	25
Σ Paraffin	232	66
Acetylene	3	1
	350	

	ppbC
Total Unidentified Hydrocarbons	77
Total NMHC by summing individual species	493

TABLE C8. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/26/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.3	Ethane	18.8	2,3-Dimethylpentane
(33.8)	Ethylene	21.0	3-Methylhexane
3.0	Acetylene	6.0	2,2,3-Trimethylpentane
45.0	Propane	15.8	n-Heptane
6.8	Propene	18.0	Methylcyclohexane
15.8	i-Butane	4.5	2,4-Dimethylhexane
30.0	n-Butane	1.5	2,3,4-Trimethylpentane
4.5	1-Butene	64.5	Toluene
4.5	i-Butene	3.8	2,3-Dimethylhexane
6.0	t-2-Butene	10.5	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
60.0	i-Pentane	10.5	n-Octane
27.0	n-Pentane	5.3	Ethylcyclohexane
4.5	1-Pentene	10.5	Ethylbenzene
16.5	t-2-Pentene	25.5	p & m-Xylene
12.0	c-2-Pentene	11.3	Styrene
1.5	Cyclopentene	18.0	o-Xylene
4.5	Cyclopentane	20.3	n-Nonane
8.3	2,3-Dimethylbutane	3.0	i-Propylbenzene
37.5	2-Methylpentane	11.3	n-Propylbenzene
2.3	c-4-Methyl-2-pentene	7.5	p-Ethyltoluene
23.3	3-Methylpentane	6.8	m-Ethyltoluene
3.8	1-Hexene	15.8	o-Ethyltoluene
21.8	n-Hexane	7.5	1,3,5-Trimethylbenzene
6.8	t-2-Hexene	27.8	1,2,4-Trimethylbenzene
3.8	c-2-Hexene	6.8	1,2,3-Trimethylbenzene
19.5	Methylcyclopentane	6.0	Methylstyrene
5.3	2,4-Dimethylpentane	4.5	1,3-Diethylbenzene
99.8	Benzene	3.8	1,4-Diethylbenzene
6.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	67	8
Σ Aromatic	306	36
Σ Paraffin	474	55
Acetylene	3	---
	860	

	ppbC
Total Unidentified Hydrocarbons	279
Total NMHC by summing individual species	1139

TABLE C9. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/30/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.0	Ethane	4.0	2,3-Dimethylpentane
(429.)	Ethylene	6.5	3-Methylhexane
7.0	Acetylene	3.5	2,2,3-Trimethylpentane
18.5	Propane	4.5	n-Heptane
5.0	Propene	12.5	Methylcyclohexane
8.5	i-Butane	3.0	2,4-Dimethylhexane
21.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	24.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
23.5	i-Pentane	2.0	n-Octane
13.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	12.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	5.0	o-Xylene
1.0	Cyclopentane	2.5	n-Nonane
2.0	2,3-Dimethylbutane	18.0	i-Propylbenzene
7.5	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
5.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.0	o-Ethyltoluene
8.0	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
14.0	Benzene	---	1,4-Diethylbenzene
2.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	7	2	Total Unidentified Hydrocarbons	73
Σ Aromatic	101	35		
Σ Paraffin	173	60	Total NMHC by summing individual species	361
Acetylene	7	2		
	288			

TABLE C10. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 7/31/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	4.0	2,3-Dimethylpentane
(196)	Ethylene	5.0	3-Methylhexane
12.5	Acetylene	4.0	2,2,3-Trimethylpentane
18.0	Propane	3.5	n-Heptane
6.5	Propene	4.0	Methylcyclohexane
14.0	i-Butane	2.5	2,4-Dimethylhexane
25.5	n-Butane	---	2,3,4-Trimethylpentane
4.0	1-Butene	26.5	Toluene
6.0	i-Butene	1.0	2,3-Dimethylhexane
3.5	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
28.5	i-Pentane	2.5	n-Octane
19.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	6.5	o-Xylene
1.5	Cyclopentane	5.5	n-Nonane
3.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
12.0	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
9.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
8.0	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	12.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	1.0	Methylstyrene
2.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
28.5	Benzene	1.0	1,4-Diethylbenzene
3.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	23	7	Total Unidentified Hydrocarbons	78
Σ Aromatic	110	32		
Σ Paraffin	200	56	Total NMHC by summing individual species	424
Acetylene	13	4		
	343			

TABLE C11. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/1/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	2.0	2,3-Dimethylpentane
(798.)	Ethylene	3.0	3-Methylhexane
4.5	Acetylene	2.5	2,2,3-Trimethylpentane
31.5	Propane	2.0	n-Heptane
21.5	Propene	2.0	Methylcyclohexane
18.0	i-Butane	1.0	2,4-Dimethylhexane
57.0	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	11.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
25.0	i-Pentane	1.5	n-Octane
18.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.0	Ethylbenzene
---	t-2-Pentene	6.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.0	o-Xylene
1.0	Cyclopentane	2.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
6.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	0.5	p-Ethyltoluene
5.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	9.0	o-Ethyltoluene
8.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.0	Benzene	3.5	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	24	8	Total Unidentified Hydrocarbons	60
Σ Aromatic	52	18		
Σ Paraffin	205	72	Total NMHC by summing individual species	345
Acetylene	5	2		
	285			

TABLE C12. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	2.5	2,3-Dimethylpentane
(90.0)	Ethylene	4.0	3-Methylhexane
3.0	Acetylene	---	2,2,3-Trimethylpentane
19.5	Propane	2.5	n-Heptane
4.0	Propene	8.0	Methylcyclohexane
8.5	i-Butane	2.5	2,4-Dimethylhexane
20.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	12.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
13.5	i-Pentane	1.0	n-Octane
10.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	9.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	3.5	o-Xylene
---	Cyclopentane	2.5	n-Nonane
1.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
4.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
3.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
4.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.5	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	4	2
Σ Aromatic	58	31
Σ Paraffin	123	65
Acetylene	3	2
	189	

	ppbC
Total Unidentified Hydrocarbons	137
Total NMHC by summing individual species	226

TABLE C13. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/3/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
20.5	Ethane	5.0	2,3-Dimethylpentane
(376.)	Ethylene	6.5	3-Methylhexane
10.5	Acetylene	4.0	2,2,3-Trimethylpentane
42.0	Propane	4.5	n-Heptane
12.0	Propene	6.0	Methylcyclohexane
22.5	i-Butane	2.5	2,4-Dimethylhexane
46.5	n-Butane	---	2,3,4-Trimethylpentane
4.5	1-Butene	22.0	Toluene
3.5	i-Butene	1.0	2,3-Dimethylhexane
1.5	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
45.0	i-Pentane	3.0	n-Octane
40.5	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	11.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.0	Cyclopentane	2.5	n-Nonane
3.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
13.5	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
9.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	5.5	o-Ethyltoluene
15.5	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
5.5	Methylcyclopentane	1.5	Methylstyrene
3.5	2,4-Dimethylpentane	0.5	1,3-Diethylbenzene
34.5	Benzene	1.0	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	24	5
Σ Aromatic	107	23
Σ Paraffin	315	69
Acetylene	11	2
	457	

	ppbC
Total Unidentified Hydrocarbons	82
Total NMHC by summing individual species	539

TABLE C14. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/4/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.5	Ethane	2.5	2,3-Dimethylpentane
(654.)	Ethylene	3.5	3-Methylhexane
5.5	Acetylene	2.5	2,2,3-Trimethylpentane
21.5	Propane	2.0	n-Heptane
5.0	Propene	2.0	Methylcyclohexane
24.0	i-Butane	1.5	2,4-Dimethylhexane
39.0	n-Butane	---	2,3,4-Trimethylpentane
3.5	1-Butene	13.5	Toluene
3.5	i-Butene	---	2,3-Dimethylhexane
1.5	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
34.0	i-Pentane	1.5	n-Octane
31.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	7.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.5	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
1.5	2,3-Dimethylbutane	3.0	i-Propylbenzene
6.0	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
4.0	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	3.5	o-Ethyltoluene
7.5	n-Hexane	4.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	1.0	Methylstyrene
2.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
4.5	Benzene	0.5	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	16	6	Total Unidentified Hydrocarbons	25
Σ Aromatic	54	19		
Σ Paraffin	206	73	Total NMHC by summing individual species	307
Acetylene	6	2		
	282			

TABLE C15. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/5/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
14.0	Ethane	3.0	2,3-Dimethylpentane
(525.)	Ethylene	4.0	3-Methylhexane
6.0	Acetylene	4.5	2,2,3-Trimethylpentane
11.0	Propane	3.0	n-Heptane
4.5	Propene	5.0	Methylcyclohexane
12.0	i-Butane	2.0	2,4-Dimethylhexane
29.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	18.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
22.5	i-Pentane	1.5	n-Octane
23.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	11.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.5	o-Xylene
1.0	Cyclopentane	2.0	n-Nonane
3.0	2,3-Dimethylbutane	1.0	i-Propylbenzene
9.0	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
5.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.0	o-Ethyltoluene
7.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	1.0	Methylstyrene
1.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
7.5	Benzene	1.0	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	8	3
Σ Aromatic	68	27
Σ Paraffin	173	68
Acetylene	6	2
	255	

	ppbC
Total Unidentified Hydrocarbons	35
Total NMHC by summing individual species	290

TABLE C16. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/6/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
16.5	Ethane	6.5	2,3-Dimethylpentane
(244.)	Ethylene	7.5	3-Methylhexane
13.0	Acetylene	5.0	2,2,3-Trimethylpentane
57.5	Propane	5.5	n-Heptane
10.0	Propene	5.0	Methylcyclohexane
16.0	i-Butane	2.5	2,4-Dimethylhexane
36.5	n-Butane	1.0	2,3,4-Trimethylpentane
4.0	1-Butene	26.5	Toluene
6.0	i-Butene	1.5	2,3-Dimethylhexane
3.0	t-2-Butene	4.5	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
40.0	i-Pentane	3.0	n-Octane
30.0	n-Pentane	1.0	Ethylcyclohexane
4.0	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	8.0	o-Xylene
2.5	Cyclopentane	3.5	n-Nonane
3.5	2,3-Dimethylbutane	---	i-Propylbenzene
17.0	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	7.5	p-Ethyltoluene
10.5	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	9.5	o-Ethyltoluene
17.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	10.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	2.0	Methylstyrene
3.5	2,4-Dimethylpentane	2.0	1,3-Diethylbenzene
12.5	Benzene	1.0	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	32	7
Σ Aromatic	97	21
Σ Paraffin	330	71
Acetylene	13	3
	467	

	ppbC
Total Unidentified Hydrocarbons	83
Total NMHC by summing individual species	550

TABLE C17. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/7/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
5.0	Ethane	2.5	2,3-Dimethylpentane
(594.)	Ethylene	3.0	3-Methylhexane
4.5	Acetylene	2.0	2,2,3-Trimethylpentane
10.5	Propane	2.0	n-Heptane
4.0	Propene	2.0	Methylcyclohexane
14.5	i-Butane	1.0	2,4-Dimethylhexane
40.0	n-Butane	---	2,3,4-Trimethylpentane
3.0	1-Butene	12.0	Toluene
2.0	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
24.5	i-Pentane	1.0	n-Octane
15.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	9.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.0	o-Xylene
1.0	Cyclopentane	2.5	n-Nonane
1.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
7.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
5.0	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.0	o-Ethyltoluene
8.0	n-Hexane	5.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.5	Benzene	1.0	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	4
Σ Aromatic	61	27
Σ Paraffin	148	66
Acetylene	5	2
	223	

	ppbC
Total Unidentified Hydrocarbons	49
Total NMHC by summing individual species	272

TABLE C18. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/8/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
37.0	Ethane	9.0	2,3-Dimethylpentane
(85.0)	Ethylene	10.5	3-Methylhexane
6.0	Acetylene	5.5	2,2,3-Trimethylpentane
93.0	Propane	10.5	n-Heptane
19.0	Propene	10.5	Methylcyclohexane
80.5	i-Butane	2.0	2,4-Dimethylhexane
159.	n-Butane	---	2,3,4-Trimethylpentane
4.5	1-Butene	21.5	Toluene
3.5	i-Butene	2.0	2,3-Dimethylhexane
1.5	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	4.0	3-Ethylhexane
98.5	i-Pentane	5.5	n-Octane
54.5	n-Pentane	1.5	Ethylcyclohexane
5.5	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	10.5	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	6.0	o-Xylene
4.5	Cyclopentane	3.5	n-Nonane
5.5	2,3-Dimethylbutane	2.5	i-Propylbenzene
26.0	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
16.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	6.5	o-Ethyltoluene
24.5	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
11.0	Methylcyclopentane	1.0	Methylstyrene
3.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
16.0	Benzene	1.0	1,4-Diethylbenzene
7.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	38	5	Total Unidentified Hydrocarbons	61
Σ Aromatic	85	10		
Σ Paraffin	688	84	Total NMHC by summing individual species	878
Acetylene	6	1		
	817			

TABLE C19. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/9/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.0	Ethane	5.5	2,3-Dimethylpentane
(408.)	Ethylene	5.5	3-Methylhexane
6.5	Acetylene	3.0	2,2,3-Trimethylpentane
14.5	Propane	4.0	n-Heptane
7.0	Propene	3.5	Methylcyclohexane
12.0	i-Butane	1.5	2,4-Dimethylhexane
28.5	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	26.0	Toluene
3.5	i-Butene	1.0	2,3-Dimethylhexane
1.5	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
27.0	i-Pentane	2.0	n-Octane
34.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.5	o-Xylene
1.5	Cyclopentane	3.5	n-Nonane
3.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
10.5	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
9.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	7.5	o-Ethyltoluene
11.5	n-Hexane	7.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	11.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
4.0	Methylcyclopentane	2.5	Methylstyrene
3.0	2,4-Dimethylpentane	3.0	1,3-Diethylbenzene
8.5	Benzene	5.0	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	18	5
Σ Aromatic	105	31
Σ Paraffin	206	61
Acetylene	7	2
	336	

	ppbC
Total Unidentified Hydrocarbons	82
Total NMHC by summing individual species	418

TABLE C20. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/10/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.8	Ethane	10.5	2,3-Dimethylpentane
(126.)	Ethylene	12.0	3-Methylhexane
3.0	Acetylene	5.3	2,2,3-Trimethylpentane
20.3	Propane	12.8	n-Heptane
9.0	Propene	12.0	Methylcyclohexane
16.5	i-Butane	3.0	2,4-Dimethylhexane
39.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	96.0	Toluene
---	i-Butene	3.0	2,3-Dimethylhexane
---	t-2-Butene	4.5	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
39.0	i-Pentane	7.5	n-Octane
24.8	n-Pentane	2.3	Ethylcyclohexane
---	1-Pentene	5.3	Ethylbenzene
---	t-2-Pentene	14.5	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	7.5	o-Xylene
3.0	Cyclopentane	4.5	n-Nonane
4.5	2,3-Dimethylbutane	0.8	i-Propylbenzene
20.3	2-Methylpentane	2.3	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
12.8	3-Methylpentane	2.3	m-Ethyltoluene
4.5	1-Hexene	3.0	o-Ethyltoluene
19.5	n-Hexane	2.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.5	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	---	Methylstyrene
3.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
185.	Benzene	---	1,4-Diethylbenzene
12.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	18	3	Total Unidentified Hydrocarbons	81
Σ Aromatic	326	49		
Σ Paraffin	318	48	Total NMHC by summing individual species	744
Acetylene	3	--		
	663			

TABLE C21. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
14.3	Ethane	3.0	2,3-Dimethylpentane
(537.)	Ethylene	3.0	3-Methylhexane
4.5	Acetylene	2.3	2,2,3-Trimethylpentane
34.5	Propane	2.3	n-Heptane
59.3	Propene	1.5	Methylcyclohexane
14.3	i-Butane	1.5	2,4-Dimethylhexane
77.3	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	10.5	Toluene
---	i-Butene	0.8	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
22.5	i-Pentane	1.5	n-Octane
12.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.3	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	0.8	Styrene
---	Cyclopentene	3.0	o-Xylene
1.5	Cyclopentane	1.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
7.5	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
5.3	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
14.3	n-Hexane	0.8	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.8	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.8	Methylcyclopentane	---	Methylstyrene
2.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.3	Benzene	---	1,4-Diethylbenzene
2.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	61	18
Σ Aromatic	42	12
Σ Paraffin	234	69
Acetylene	5	1
	340	

	ppbC
Total Unidentified Hydrocarbons	27
Total NMHC by summing individual species	367

TABLE C22. HYDROCARBON CONCENTRATIONS IN 0600-0700 INDUSTRIAL SITE SAMPLE ON 8/15/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.5	Ethane	9.5	2,3-Dimethylpentane
(132.)	Ethylene	11.0	3-Methylhexane
13.0	Acetylene	4.5	2,2,3-Trimethylpentane
18.0	Propane	13.0	n-Heptane
11.0	Propene	9.0	Methylcyclohexane
22.5	i-Butane	2.5	2,4-Dimethylhexane
55.0	n-Butane	1.0	2,3,4-Trimethylpentane
3.5	1-Butene	20.5	Toluene
5.5	i-Butene	2.0	2,3-Dimethylhexane
2.0	t-2-Butene	4.0	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
53.5	i-Pentane	5.5	n-Octane
37.0	n-Pentane	2.0	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	3.5	Styrene
---	Cyclopentene	7.5	o-Xylene
3.0	Cyclopentane	5.0	n-Nonane
4.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
20.5	2-Methylpentane	4.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
13.5	3-Methylpentane	4.5	m-Ethyltoluene
---	1-Hexene	7.0	o-Ethyltoluene
21.5	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
9.0	Methylcyclopentane	2.0	Methylstyrene
3.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
12.0	Benzene	1.0	1,4-Diethylbenzene
5.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	26	5
Σ Aromatic	96	20
Σ Paraffin	355	73
Acetylene	13	--
	489	

	ppbC
Total Unidentified Hydrocarbons	99
Total NMHC by summing individual species	588

APPENDIX D

Individual Hydrocarbon Concentrations in 0800-0900 Industrial Site Samples

TABLE D1. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.3	Ethane	10.5	2,3-Dimethylpentane
(407.)	Ethylene	13.5	3-Methylhexane
17.3	Acetylene	7.5	2,2,3-Trimethylpentane
27.0	Propane	7.5	n-Heptane
10.5	Propene	6.8	Methylcyclohexane
29.3	i-Butane	3.0	2,4-Dimethylhexane
72.0	n-Butane	---	2,3,4-Trimethylpentane
3.0	1-Butene	49.5	Toluene
3.8	i-Butene	2.3	2,3-Dimethylhexane
3.8	t-2-Butene	5.3	2-Methylheptane
---	c-2-Butene	3.8	3-Ethylhexane
63.8	i-Pentane	3.0	n-Octane
33.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	6.8	Ethylbenzene
---	t-2-Pentene	18.8	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	9.0	o-Xylene
3.8	Cyclopentane	4.5	n-Nonane
6.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
24.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
15.0	3-Methylpentane	3.8	m-Ethyltoluene
---	1-Hexene	6.8	o-Ethyltoluene
22.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
9.0	Methylcyclopentane	2.3	Methylstyrene
6.8	2,4-Dimethylpentane	0.8	1,3-Diethylbenzene
15.0	Benzene	0.8	1,4-Diethylbenzene
5.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	21	4	Total Unidentified Hydrocarbons	248
Σ Aromatic	133	24		
Σ Paraffin	390	69	Total NMHC by summing individual species	809
Acetylene	17	3		
	561			

TABLE D2. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/18/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	7.5	2,3-Dimethylpentane
(255.)	Ethylene	10.0	3-Methylhexane
17.0	Acetylene	6.0	2,2,3-Trimethylpentane
17.5	Propane	7.0	n-Heptane
10.0	Propene	16.5	Methylcyclohexane
26.0	i-Butane	2.0	2,4-Dimethylhexane
32.5	n-Butane	---	2,3,4-Trimethylpentane
6.5	1-Butene	30.0	Toluene
5.5	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
36.5	i-Pentane	2.0	n-Octane
23.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	7.0	o-Xylene
2.5	Cyclopentane	1.0	n-Nonane
4.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
14.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
7.5	3-Methylpentane	3.5	m-Ethyltoluene
8.0	1-Hexene	7.0	o-Ethyltoluene
12.0	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
5.0	Methylcyclopentane	1.5	Methylstyrene
3.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
10.5	Benzene	---	1,4-Diethylbenzene
4.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	23	9
Σ Aromatic	98	24
Σ Paraffin	256	63
Acetylene	17	4
	406	

	ppbC
Total Unidentified Hydrocarbons	152
Total NMHC by summing individual species	629

TABLE D3. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/19/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.0	Ethane	8.5	2,3-Dimethylpentane
(213.)	Ethylene	12.0	3-Methylhexane
16.5	Acetylene	6.0	2,2,3-Trimethylpentane
21.0	Propane	8.0	n-Heptane
7.6	Propene	10.0	Methylcyclohexane
14.0	i-Butane	4.5	2,4-Dimethylhexane
28.5	n-Butane	1.5	2,3,4-Trimethylpentane
2.0	1-Butene	69.5	Toluene
2.0	i-Butene	2.5	2,3-Dimethylhexane
4.5	t-2-Butene	5.0	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
34.5	i-Pentane	4.0	n-Octane
18.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	8.0	Ethylbenzene
---	t-2-Pentene	23.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	10.0	o-Xylene
3.0	Cyclopentane	3.0	n-Nonane
5.5	2,3-Dimethylbutane	28.0	i-Propylbenzene
22.5	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
15.5	3-Methylpentane	3.5	m-Ethyltoluene
4.0	1-Hexene	7.5	o-Ethyltoluene
22.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
9.5	Methylcyclopentane	1.0	Methylstyrene
5.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
18.0	Benzene	---	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	23	9
Σ Aromatic	187	24
Σ Paraffin	284	63
Acetylene	17	4
	406	

	ppbC
Total Unidentified Hydrocarbons	119
Total NMHC by summing individual species	558

TABLE D4. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/23/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
31.5	Ethane	10.5	2,3-Dimethylpentane
(*)	Ethylene	17.3	3-Methylhexane
6.0	Acetylene	6.8	2,2,3-Trimethylpentane
84.0	Propane	12.8	n-Heptane
33.8	Propene	52.5	Methylcyclohexane
42.0	i-Butane	5.3	2,4-Dimethylhexane
82.5	n-Butane	---	2,3,4-Trimethylpentane
3.0	1-Butene	36.8	Toluene
3.8	i-Butene	3.0	2,3-Dimethylhexane
3.0	t-2-Butene	5.3	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
48.8	i-Pentane	7.5	n-Octane
31.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	15.8	p & m-Xylene
---	c-2-Pentene	5.3	Styrene
---	Cyclopentene	8.3	o-Xylene
3.8	Cyclopentane	13.5	n-Nonane
5.3	2,3-Dimethylbutane	3.8	i-Propylbenzene
24.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	9.0	p-Ethyltoluene
16.5	3-Methylpentane	5.3	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
32.3	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	23.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	6.8	1,2,3-Trimethylbenzene
13.5	Methylcyclopentane	6.0	Methylstyrene
4.5	2,4-Dimethylpentane	4.5	1,3-Diethylbenzene
21.8	Benzene	3.0	1,4-Diethylbenzene
11.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	55	7
Σ Aromatic	153	20
Σ Paraffin	571	73
Acetylene	6	1
	786	

	ppbC
Total Unidentified Hydrocarbons	262
Total NMHC by summing individual species	1048

TABLE D5. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/24/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
24.8	Ethane	17.3	2,3-Dimethylpentane
(167.)	Ethylene	21.0	3-Methylhexane
10.5	Acetylene	2.3	2,2,3-Trimethylpentane
66.8	Propane	16.5	n-Heptane
26.3	Propene	18.0	Methylcyclohexane
42.0	i-Butane	3.8	2,4-Dimethylhexane
80.3	n-Butane	1.5	2,3,4-Trimethylpentane
4.5	1-Butene	49.5	Toluene
4.5	i-Butene	2.3	2,3-Dimethylhexane
5.3	t-2-Butene	6.8	2-Methylheptane
---	c-2-Butene	6.0	3-Ethylhexane
75.5	i-Pentane	8.3	n-Octane
42.0	n-Pentane	3.0	Ethylcyclohexane
6.0	1-Pentene	6.8	Ethylbenzene
---	t-2-Pentene	18.8	p & m-Xylene
---	c-2-Pentene	2.3	Styrene
1.5	Cyclopentene	8.3	o-Xylene
6.0	Cyclopentane	8.3	n-Nonane
12.8	2,3-Dimethylbutane	3.0	i-Propylbenzene
44.3	2-Methylpentane	6.8	n-Propylbenzene
2.3	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
30.0	3-Methylpentane	3.8	m-Ethyltoluene
7.5	1-Hexene	12.0	o-Ethyltoluene
37.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
6.0	t-2-Hexene	12.0	1,2,4-Trimethylbenzene
3.0	c-2-Hexene	3.8	1,2,3-Trimethylbenzene
21.8	Methylcyclopentane	1.5	Methylstyrene
9.8	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
39.0	Benzene	1.5	1,4-Diethylbenzene
9.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	70	8
Σ Aromatic	175	21
Σ Paraffin	575	69
Acetylene	11	1
	831	

	ppbC
Total Unidentified Hydrocarbons	216
Total NMHC by summing individual species	1047

TABLE D6. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/25/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
42.0	Ethane	6.8	2,3-Dimethylpentane
(194.)	Ethylene	9.0	3-Methylhexane
3.8	Acetylene	36.0	2,2,3-Trimethylpentane
92.3	Propane	7.5	n-Heptane
12.8	Propene	8.3	Methylcyclohexane
41.3	i-Butane	6.8	2,4-Dimethylhexane
127.	n-Butane	6.0	2,3,4-Trimethylpentane
3.0	1-Butene	38.3	Toluene
2.3	i-Butene	3.8	2,3-Dimethylhexane
2.3	t-2-Butene	3.8	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
118.	i-Pentane	7.5	n-Octane
31.5	n-Pentane	3.0	Ethylcyclohexane
6.8	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.3	Cyclopentane	6.0	n-Nonane
12.0	2,3-Dimethylbutane	2.3	i-Propylbenzene
23.3	2-Methylpentane	8.3	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.8	p-Ethyltoluene
18.0	3-Methylpentane	3.0	m-Ethyltoluene
2.3	1-Hexene	6.8	o-Ethyltoluene
24.8	n-Hexane	2.3	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	12.8	1,2,4-Trimethylbenzene
0.8	c-2-Hexene	3.8	1,2,3-Trimethylbenzene
11.3	Methylcyclopentane	2.3	Methylstyrene
8.3	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
12.0	Benzene	1.5	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	37	4
Σ Aromatic	120	15
Σ Paraffin	664	81
Acetylene	4	--
	824	

	ppbC
Total Unidentified Hydrocarbons	164
Total NMHC by summing individual species	988

TABLE D7. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/26/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.3	Ethane	4.5	2,3-Dimethylpentane
(35.3)	Ethylene	6.8	3-Methylhexane
5.3	Acetylene	3.0	2,2,3-Trimethylpentane
28.5	Propane	4.5	n-Heptane
23.3	Propene	15.0	Methylcyclohexane
9.0	i-Butane	2.3	2,4-Dimethylhexane
38.3	n-Butane	---	2,3,4-Trimethylpentane
2.3	1-Butene	21.8	Toluene
3.0	i-Butene	1.5	2,3-Dimethylhexane
5.3	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	3.8	3-Ethylhexane
30.0	i-Pentane	2.3	n-Octane
17.3	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	5.3	Ethylbenzene
---	t-2-Pentene	15.3	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.3	Cyclopentane	11.3	n-Nonane
3.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
10.5	2-Methylpentane	9.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.8	p-Ethyltoluene
6.0	3-Methylpentane	4.5	m-Ethyltoluene
3.0	1-Hexene	12.8	o-Ethyltoluene
11.3	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	23.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	5.3	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
11.3	Benzene	3.0	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	40	10
Σ Aromatic	128	31
Σ Paraffin	235	58
Acetylene	5	1
	408	

	ppbC
Total Unidentified Hydrocarbons	164
Total NMHC by summing individual species	572

TABLE D8. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/27/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.3	Ethane	5.3	2,3-Dimethylpentane
(266.)	Ethylene	6.0	3-Methylhexane
12.0	Acetylene	3.8	2,2,3-Trimethylpentane
12.0	Propane	4.5	n-Heptane
7.5	Propene	3.8	Methylcyclohexane
12.0	i-Butane	2.3	2,4-Dimethylhexane
27.8	n-Butane	---	2,3,4-Trimethylpentane
2.3	1-Butene	27.0	Toluene
2.3	i-Butene	1.5	2,3-Dimethylhexane
3.0	t-2-Butene	4.5	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
29.3	i-Pentane	3.0	n-Octane
22.5	n-Pentane	0.8	Ethylcyclohexane
---	1-Pentene	9.8	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	7.5	o-Xylene
1.5	Cyclopentane	6.0	n-Nonane
3.0	2,3-Dimethylbutane	---	i-Propylbenzene
12.8	2-Methylpentane	3.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
9.0	3-Methylpentane	2.3	m-Ethyltoluene
---	1-Hexene	32.3	o-Ethyltoluene
12.8	n-Hexane	78.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	21.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	21.0	1,2,3-Trimethylbenzene
5.3	Methylcyclopentane	4.5	Methylstyrene
3.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
9.8	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	18	4
Σ Aromatic	240	50
Σ Paraffin	206	43
Acetylene	12	3
	476	

	ppbC
Total Unidentified Hydrocarbons	190
Total NMHC by summing individual species	666

TABLE D9. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/30/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	4.5	2,3-Dimethylpentane
(302.)	Ethylene	5.5	3-Methylhexane
10.5	Acetylene	3.5	2,2,3-Trimethylpentane
20.0	Propane	4.0	n-Heptane
7.5	Propene	4.0	Methylcyclohexane
10.0	i-Butane	2.0	2,4-Dimethylhexane
27.0	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	21.5	Toluene
2.5	i-Butene	1.0	2,3-Dimethylhexane
1.5	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
28.5	i-Pentane	2.0	n-Octane
17.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	12.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.0	Cyclopentane	3.0	n-Nonane
3.0	2,3-Dimethylbutane	4.5	i-Propylbenzene
11.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
8.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
12.0	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
5.0	Methylcyclopentane	1.5	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
32.0	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	17	5
Σ Aromatic	107	32
Σ Paraffin	194	59
Acetylene	11	3
	330	

	ppbC
Total Unidentified Hydrocarbons	53
Total NMHC by summing individual species	383

TABLE D10. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 7/31/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.0	Ethane	6.0	2,3-Dimethylpentane
(396.)	Ethylene	7.5	3-Methylhexane
13.5	Acetylene	4.0	2,2,3-Trimethylpentane
24.0	Propane	5.0	n-Heptane
8.0	Propene	6.5	Methylcyclohexane
18.0	i-Butane	3.5	2,4-Dimethylhexane
38.5	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	28.0	Toluene
4.0	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
35.5	i-Pentane	2.5	n-Octane
23.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	14.5	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	7.0	o-Xylene
3.0	Cyclopentane	5.5	n-Nonane
5.0	2,3-Dimethylbutane	1.0	i-Propylbenzene
18.0	2-Methylpentane	3.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
14.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	7.0	o-Ethyltoluene
13.5	n-Hexane	6.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	12.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
5.5	Methylcyclopentane	1.0	Methylstyrene
4.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
36.5	Benzene	1.0	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	20	5
Σ Aromatic	131	30
Σ Paraffin	266	62
Acetylene	4	1
	430	

	ppbC
Total Unidentified Hydrocarbons	81
Total NMHC by summing individual species	511

TABLE D11. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/1/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
37.0	Ethane	6.5	2,3-Dimethylpentane
(684.)	Ethylene	8.0	3-Methylhexane
11.0	Acetylene	5.0	2,2,3-Trimethylpentane
140.	Propane	7.5	n-Heptane
58.5	Propene	9.0	Methylcyclohexane
63.0	i-Butane	2.0	2,4-Dimethylhexane
163.	n-Butane	---	2,3,4-Trimethylpentane
7.5	1-Butene	28.0	Toluene
6.5	i-Butene	1.5	2,3-Dimethylhexane
5.0	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
62.0	i-Pentane	5.0	n-Octane
38.5	n-Pentane	2.0	Ethylcyclohexane
3.5	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	11.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	6.5	o-Xylene
3.0	Cyclopentane	5.0	n-Nonane
4.5	2,3-Dimethylbutane	4.5	i-Propylbenzene
17.5	2-Methylpentane	4.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
13.0	3-Methylpentane	5.0	m-Ethyltoluene
---	1-Hexene	8.0	o-Ethyltoluene
22.0	n-Hexane	9.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	11.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
10.0	Methylcyclopentane	1.0	Methylstyrene
3.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
17.0	Benzene	1.0	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	85	10
Σ Aromatic	115	14
Σ Paraffin	637	75
Acetylene	11	1
	848	

	ppbC
Total Unidentified Hydrocarbons	127
Total NMHC by summing individual species	975

TABLE D12. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	2.0	2,3-Dimethylpentane
(175)	Ethylene	3.0	3-Methylhexane
6.5	Acetylene	2.5	2,2,3-Trimethylpentane
12.0	Propane	2.0	n-Heptane
9.5	Propene	3.5	Methylcyclohexane
11.5	i-Butane	2.0	2,4-Dimethylhexane
21.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	13.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
14.5	i-Pentane	1.5	n-Octane
8.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	10.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	5.0	o-Xylene
---	Cyclopentane	3.0	n-Nonane
1.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
4.0	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
3.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
5.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	---	Methylstyrene
26.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.0	Benzene	---	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	11	5
Σ Aromatic	60	28
Σ Paraffin	140	65
Acetylene	7	3
	217	

	ppbC
Total Unidentified Hydrocarbons	61
Total NMHC by summing individual species	278

TABLE D13. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/3/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
21.0	Ethane	7.5	2,3-Dimethylpentane
(613.)	Ethylene	9.5	3-Methylhexane
11.5	Acetylene	5.5	2,2,3-Trimethylpentane
46.5	Propane	6.0	n-Heptane
14.0	Propene	10.5	Methylcyclohexane
25.5	i-Butane	3.5	2,4-Dimethylhexane
59.0	n-Butane	1.0	2,3,4-Trimethylpentane
4.5	1-Butene	34.5	Toluene
5.5	i-Butene	2.0	2,3-Dimethylhexane
3.0	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
51.0	i-Pentane	4.5	n-Octane
37.0	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	18.0	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	9.0	o-Xylene
2.7	Cyclopentane	5.0	n-Nonane
5.0	2,3-Dimethylbutane	5.0	i-Propylbenzene
18.0	2-Methylpentane	4.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
13.0	3-Methylpentane	3.5	m-Ethyltoluene
---	1-Hexene	7.5	o-Ethyltoluene
19.0	n-Hexane	6.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	13.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
8.0	Methylcyclopentane	1.5	Methylstyrene
5.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
31.5	Benzene	1.0	1,4-Diethylbenzene
5.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	30	5
Σ Aromatic	149	26
Σ Paraffin	377	66
Acetylene	12	2
	568	

	ppbC
Total Unidentified Hydrocarbons	132
Total NMHC by summing individual species	700

TABLE D14. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/4/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
16.5	Ethane	4.0	2,3-Dimethylpentane
(889.)	Ethylene	4.5	3-Methylhexane
7.5	Acetylene	3.5	2,2,3-Trimethylpentane
35.0	Propane	3.5	n-Heptane
13.5	Propene	2.5	Methylcyclohexane
27.0	i-Butane	2.0	2,4-Dimethylhexane
56.0	n-Butane	0.5	2,3,4-Trimethylpentane
7.0	1-Butene	18.0	Toluene
29.5	i-Butene	1.0	2,3-Dimethylhexane
11.0	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
56.5	i-Pentane	1.5	n-Octane
34.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	9.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.5	o-Xylene
1.5	Cyclopentane	2.0	n-Nonane
2.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
10.5	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	3.5	p-Ethyltoluene
7.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
10.5	n-Hexane	4.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	1.0	Methylstyrene
1.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
10.0	Benzene	1.0	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	64	15
Σ Aromatic	71	16
Σ Paraffin	294	67
Acetylene	8	2
	436	

	ppbC
Total Unidentified Hydrocarbons	96
Total NMHC by summing individual species	532

TABLE D15. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/5/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.5	Ethane	3.0	2,3-Dimethylpentane
(707.)	Ethylene	3.5	3-Methylhexane
10.5	Acetylene	2.5	2,2,3-Trimethylpentane
12.5	Propane	3.0	n-Heptane
4.5	Propene	3.0	Methylcyclohexane
8.5	i-Butane	1.5	2,4-Dimethylhexane
25.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	20.5	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
19.5	i-Pentane	1.5	n-Octane
17.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	11.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	5.0	o-Xylene
1.0	Cyclopentane	2.0	n-Nonane
1.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
7.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
5.0	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	4.0	o-Ethyltoluene
8.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
9.0	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	5	2
Σ Aromatic	68	30
Σ Paraffin	146	63
Acetylene	11	5
	230	

	ppbC
Total Unidentified Hydrocarbons	25
Total NMHC by summing individual species	255

TABLE D16. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/6/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.5	Ethane	9.5	2,3-Dimethylpentane
(573.)	Ethylene	10.5	3-Methylhexane
23.0	Acetylene	7.0	2,2,3-Trimethylpentane
29.5	Propane	7.5	n-Heptane
15.5	Propene	8.5	Methylcyclohexane
24.0	i-Butane	4.0	2,4-Dimethylhexane
60.0	n-Butane	1.5	2,3,4-Trimethylpentane
6.0	1-Butene	32.5	Toluene
7.5	i-Butene	2.0	2,3-Dimethylhexane
3.5	t-2-Butene	6.0	2-Methylheptane
---	c-2-Butene	4.5	3-Ethylhexane
62.0	i-Pentane	4.0	n-Octane
41.0	n-Pentane	1.5	Ethylcyclohexane
5.0	1-Pentene	7.0	Ethylbenzene
---	t-2-Pentene	20.5	p & m-Xylene
---	c-2-Pentene	3.5	Styrene
---	Cyclopentene	10.5	o-Xylene
3.5	Cyclopentane	4.5	n-Nonane
5.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
22.0	2-Methylpentane	4.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	9.0	p-Ethyltoluene
15.0	3-Methylpentane	4.0	m-Ethyltoluene
---	1-Hexene	9.5	o-Ethyltoluene
19.5	n-Hexane	2.0	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	12.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
8.5	Methylcyclopentane	2.0	Methylstyrene
4.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
17.0	Benzene	2.0	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	46	8
Σ Aromatic	135	23
Σ Paraffin	384	65
Acetylene	23	4
	588	

	ppbC
Total Unidentified Hydrocarbons	103
Total NMHC by summing individual species	691

TABLE D18. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/7/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.0	Ethane	4.5	2,3-Dimethylpentane
(1060.0)	Ethylene	5.5	3-Methylhexane
5.0	Acetylene	3.5	2,2,3-Trimethylpentane
18.0	Propane	4.0	n-Heptane
5.5	Propene	3.5	Methylcyclohexane
18.5	i-Butane	2.0	2,4-Dimethylhexane
39.5	n-Butane	0.5	2,3,4-Trimethylpentane
2.5	1-Butene	22.5	Toluene
3.0	i-Butene	1.0	2,3-Dimethylhexane
2.0	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
35.5	i-Pentane	2.0	n-Octane
21.0	n-Pentane	---	Ethylcyclohexane
2.0	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	6.0	o-Xylene
1.5	Cyclopentane	2.5	n-Nonane
2.5	2,3-Dimethylbutane	5.0	i-Propylbenzene
11.5	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
7.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.5	o-Ethyltoluene
10.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
4.0	Methylcyclopentane	1.0	Methylstyrene
3.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
8.0	Benzene	1.0	1,4-Diethylbenzene
2.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	18	5	Total Unidentified Hydrocarbons	39
Σ Aromatic	89	27		
Σ Paraffin	219	66	Total NMHC by summing individual species	369
Acetylene	5 330	2		

TABLE D18. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/8/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
17.5	Ethane	6.0	2,3-Dimethylpentane
(239.)	Ethylene	7.5	3-Methylhexane
11.0	Acetylene	4.0	2,2,3-Trimethylpentane
42.5	Propane	6.0	n-Heptane
14.0	Propene	5.5	Methylcyclohexane
29.0	i-Butane	2.0	2,4-Dimethylhexane
71.0	n-Butane	1.0	2,3,4-Trimethylpentane
3.0	1-Butene	23.0	Toluene
4.0	i-Butene	1.5	2,3-Dimethylhexane
2.0	t-2-Butene	4.0	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
53.0	i-Pentane	3.0	n-Octane
35.0	n-Pentane	1.0	Ethylcyclohexane
3.0	1-Pentene	4.0	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	5.5	o-Xylene
2.5	Cyclopentane	2.5	n-Nonane
4.0	2,3-Dimethylbutane	1.0	i-Propylbenzene
19.5	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
12.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
18.0	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
8.0	Methylcyclopentane	---	Methylstyrene
3.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
12.5	Benzene	---	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	28	6	Total Unidentified Hydrocarbons	26
Σ Aromatic	74	15	Total NMHC by summing individual species	507
Σ Paraffin	368	77		
Acetylene	11	2		
	481			

TABLE D19. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/9/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	7.0	2,3-Dimethylpentane
(575.)	Ethylene	8.0	3-Methylhexane
11.0	Acetylene	5.0	2,2,3-Trimethylpentane
17.0	Propane	5.5	n-Heptane
9.5	Propene	6.5	Methylcyclohexane
16.5	i-Butane	2.5	2,4-Dimethylhexane
39.5	n-Butane	1.0	2,3,4-Trimethylpentane
5.5	1-Butene	27.5	Toluene
5.0	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	4.0	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
38.0	i-Pentane	3.0	n-Octane
27.5	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	12.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	7.0	o-Xylene
2.0	Cyclopentane	3.0	n-Nonane
4.0	2,3-Dimethylbutane	1.0	i-Propylbenzene
14.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.5	p-Ethyltoluene
11.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	6.5	o-Ethyltoluene
14.0	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	1.5	Methylstyrene
3.5	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
6.5	Benzene	1.0	1,4-Diethylbenzene
4.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	26	7
Σ Aromatic	94	24
Σ Paraffin	257	66
Acetylene	11	3
	387	

	ppbC
Total Unidentified Hydrocarbons	65
Total NMHC by summing individual species	452

TABLE D20. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/10/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.8	Ethane	3.0	2,3-Dimethylpentane
(258.)	Ethylene	3.8	3-Methylhexane
---	Acetylene	3.8	2,2,3-Trimethylpentane
24.8	Propane	3.0	n-Heptane
10.5	Propene	3.8	Methylcyclohexane
10.5	i-Butane	0.8	2,4-Dimethylhexane
30.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	19.5	Toluene
---	i-Butene	0.8	2,3-Dimethylhexane
---	t-2-Butene	2.3	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
22.5	i-Pentane	1.5	n-Octane
12.8	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.3	Ethylbenzene
---	t-2-Pentene	7.5	p & m-Xylene
---	c-2-Pentene	0.8	Styrene
---	Cyclopentene	3.0	o-Xylene
1.5	Cyclopentane	1.5	n-Nonane
3.0	2,3-Dimethylbutane	---	i-Propylbenzene
7.5	2-Methylpentane	0.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
4.5	3-Methylpentane	1.5	m-Ethyltoluene
8.3	1-Hexene	2.3	o-Ethyltoluene
8.3	n-Hexane	2.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.3	1,2,4-Trimethylbenzene
2.3	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
20.3	Benzene	---	1,4-Diethylbenzene
3.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	23	9
Σ Aromatic	63	25
Σ Paraffin	170	66
Acetylene	---	--
	257	

	ppbC
Total Unidentified Hydrocarbons	51
Total NMHC by summing individual species	308

TABLE D21. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
28.5	Ethane	3.8	2,3-Dimethylpentane
(866.)	Ethylene	4.5	3-Methylhexane
5.3	Acetylene	3.8	2,2,3-Trimethylpentane
69.0	Propane	3.8	n-Heptane
24.8	Propene	3.0	Methylcyclohexane
27.8	i-Butane	1.5	2,4-Dimethylhexane
51.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	13.5	Toluene
---	i-Butene	0.8	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
30.0	i-Pentane	2.3	n-Octane
18.8	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.8	o-Xylene
1.5	Cyclopentane	2.3	n-Nonane
2.3	2,3-Dimethylbutane	1.5	i-Propylbenzene
9.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
6.0	3-Methylpentane	2.3	m-Ethyltoluene
---	1-Hexene	3.8	o-Ethyltoluene
9.0	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	---	Methylstyrene
3.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
7.5	Benzene	---	1,4-Diethylbenzene
2.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	26	7
Σ Aromatic	51	14
Σ Paraffin	293	78
Acetylene	5 375	1

	ppbC
Total Unidentified Hydrocarbons	44
Total NMHC by summing individual species	419

TABLE D22. HYDROCARBON CONCENTRATIONS IN 0800-0900 INDUSTRIAL SITE SAMPLE ON 8/15/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.0	Ethane	5.0	2,3-Dimethylpentane
(272.)	Ethylene	5.5	3-Methylhexane
11.5	Acetylene	3.5	2,2,3-Trimethylpentane
16.0	Propane	5.0	n-Heptane
9.5	Propene	4.5	Methylcyclohexane
12.5	i-Butane	1.5	2,4-Dimethylhexane
30.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	18.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	2.5	3-Ethylhexane
28.5	i-Pentane	3.0	n-Octane
20.0	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	12.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	5.0	o-Xylene
2.0	Cyclopentane	1.5	n-Nonane
2.5	2,3-Dimethylbutane	---	i-Propylbenzene
11.0	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
7.0	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
10.0	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	---	Methylstyrene
2.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
9.5	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	11	4
Σ Aromatic	64	21
Σ Paraffin	216	72
Acetylene	12	4
	302	

	ppbC
Total Unidentified Hydrocarbons	14
Total NMHC by summing individual species	316

APPENDIX E

Individual Hydrocarbon Concentrations in Afternoon (1400-1500) Integrated Samples

TABLE E1 . HYDROCARBON CONCENTRATIONS IN 1400-1500 INDUSTRIAL SITE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.0	Ethane	3.5	2,3-Dimethylpentane
(75.5)	Ethylene	4.0	3-Methylhexane
5.5	Acetylene	3.5	2,2,3-Trimethylpentane
15.0	Propane	2.5	n-Heptane
5.5	Propene	5.0	Methylcyclohexane
11.5	i-Butane	1.5	2,4-Dimethylhexane
32.5	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	15.0	Toluene
3.0	i-Butene	---	2,3-Dimethylhexane
2.0	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
31.5	i-Pentane	1.5	n-Octane
28.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	9.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.0	o-Xylene
1.5	Cyclopentane	4.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
8.0	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
5.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	5.0	o-Ethyltoluene
7.0	n-Hexane	4.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	15.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	1.0	Methylstyrene
2.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
7.5	Benzene	1.0	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	15	5
Σ Aromatic	75	27
Σ Paraffin	187	66
Acetylene	6	2
	283	

	ppbC
Total Unidentified Hydrocarbons	61
Total NMHC by summing individual species	344

TABLE E2. HYDROCARBON CONCENTRATIONS IN 1400-1500 INDUSTRIAL SITE SAMPLE ON 8/8/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.0	Ethane	3.5	2,3-Dimethylpentane
(55.5)	Ethylene	4.0	3-Methylhexane
3.5	Acetylene	3.0	2,2,3-Trimethylpentane
9.0	Propane	3.5	n-Heptane
6.0	Propene	3.5	Methylcyclohexane
12.5	i-Butane	1.5	2,4-Dimethylhexane
32.5	n-Butane	---	2,3,4-Trimethylpentane
4.5	1-Butene	15.5	Toluene
5.5	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
21.5	i-Pentane	2.0	n-Octane
17.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	10.5	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	5.5	o-Xylene
1.5	Cyclopentane	2.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
9.5	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
6.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	5.5	o-Ethyltoluene
10.0	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	1.5	Methylstyrene
1.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
7.5	Benzene	1.5	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	20	8
Σ Aromatic	69	27
Σ Paraffin	165	64
Acetylene	4	1
	257	

	ppbC
Total Unidentified Hydrocarbons	49
Total NMHC by summing individual species	306

TABLE E3. HYDROCARBON CONCENTRATIONS IN 1400-1500 INDUSTRIAL SITE SAMPLE ON 8/10/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
16.5	Ethane	3.0	2,3-Dimethylpentane
(64.5)	Ethylene	3.8	3-Methylhexane
6.0	Acetylene	3.8	2,2,3-Trimethylpentane
30.8	Propane	3.8	n-Heptane
6.0	Propene	3.0	Methylcyclohexane
15.8	i-Butane	1.5	2,4-Dimethylhexane
49.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	15.0	Toluene
---	i-Butene	0.8	2,3-Dimethylhexane
---	t-2-Butene	2.3	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
24.0	i-Pentane	2.3	n-Octane
19.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.8	Ethylbenzene
---	t-2-Pentene	10.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.5	o-Xylene
1.5	Cyclopentane	3.0	n-Nonane
3.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
8.3	2-Methylpentane	3.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.3	p-Ethyltoluene
6.0	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	5.3	o-Ethyltoluene
10.5	n-Hexane	2.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	9.8	1,2,4-Trimethylbenzene
---	c-2-Hexene	0.8	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	1.5	Methylstyrene
3.8	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
8.3	Benzene	1.5	1,4-Diethylbenzene
2.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	9	3	Total Unidentified Hydrocarbons	68
Σ Aromatic	75	23		
Σ Paraffin	232	72	Total NMHC by summing individual species	390
Acetylene	6	2		
	322			

TABLE E4. HYDROCARBON CONCENTRATIONS IN 1400-1500 INDUSTRIAL SITE SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.0	Ethane	2.0	2,3-Dimethylpentane
(98.5)	Ethylene	2.5	3-Methylhexane
4.5	Acetylene	1.5	2,2,3-Trimethylpentane
19.5	Propane	2.5	n-Heptane
4.0	Propene	2.0	Methylcyclohexane
11.0	i-Butane	1.0	2,4-Dimethylhexane
23.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	11.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
17.0	i-Pentane	1.5	n-Octane
14.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.0	Ethylbenzene
---	t-2-Pentene	6.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	2.5	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
6.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
4.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
9.0	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.0	Benzene	---	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	4	2
Σ Aromatic	37	19
Σ Paraffin	146	76
Acetylene	5	3
	193	

	ppbC
Total Unidentified Hydrocarbons	10
Total NMHC by summing individual species	203

TABLE E5 . HYDROCARBON CONCENTRATIONS IN 1400-1500 FRANKLIN INSTITUTE SAMPLE ON 8/2/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	3.0	2,3-Dimethylpentane
(60.5)	Ethylene	3.5	3-Methylhexane
7.0	Acetylene	3.0	2,2,3-Trimethylpentane
14.0	Propane	4.0	n-Heptane
5.5	Propene	5.5	Methylcyclohexane
18.0	i-Butane	2.0	2,4-Dimethylhexane
36.5	n-Butane	0.5	2,3,4-Trimethylpentane
---	1-Butene	26.0	Toluene
---	i-Butene	3.5	2,3-Dimethylhexane
---	t-2-Butene	22.0	2-Methylheptane
---	c-2-Butene	16.0	3-Ethylhexane
30.5	i-Pentane	10.0	n-Octane
26.5	n-Pentane	3.0	Ethylcyclohexane
---	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	13.5	p & m-Xylene
---	c-2-Pentene	4.0	Styrene
---	Cyclopentene	6.5	o-Xylene
1.5	Cyclopentane	4.0	n-Nonane
2.9	2,3-Dimethylbutane	1.0	i-Propylbenzene
9.5	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
5.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	4.0	o-Ethyltoluene
10.0	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	---	Methylstyrene
5.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.0	Benzene	---	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	3
Σ Aromatic	79	22
Σ Paraffin	257	73
Acetylene	7	2
	352	

	ppbC
Total Unidentified Hydrocarbons	70
Total NMHC by summing individual species	422

APPENDIX F

Individual Hydrocarbon Concentrations in Roving Samples Collected in Philadelphia Area

TABLE F1. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 0730 ON 7/18/79 NEAR DOWNINGTOWN PENNSYLVANIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
32.5	Ethane	9.0	2,3-Dimethylpentane
(254.)	Ethylene	12.0	3-Methylhexane
8.0	Acetylene	6.0	2,2,3-Trimethylpentane
95.5	Propane	9.5	n-Heptane
30.5	Propene	7.0	Methylcyclohexane
63.0	i-Butane	2.0	2,4-Dimethylhexane
133.	n-Butane	1.5	2,3,4-Trimethylpentane
5.0	1-Butene	25.0	Toluene
4.0	i-Butene	1.5	2,3-Dimethylhexane
3.0	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	5.0	3-Ethylhexane
71.5	i-Pentane	7.0	n-Octane
38.0	n-Pentane	---	Ethylcyclohexane
2.5	1-Pentene	5.0	Ethylbenzene
---	t-2-Pentene	10.0	p & m-Xylene
---	c-2-Pentene	2.5	Styrene
---	Cyclopentene	11.0	o-Xylene
3.5	Cyclopentane	3.5	n-Nonane
4.0	2,3-Dimethylbutane	6.5	i-Propylbenzene
16.5	2-Methylpentane	14.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.5	p-Ethyltoluene
12.0	3-Methylpentane	---	m-Ethyltoluene
1.5	1-Hexene	3.5	o-Ethyltoluene
16.0	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	4.0	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
11.0	Benzene	---	1,4-Diethylbenzene
4.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	53	7
Σ Aromatic	101	14
Σ Paraffin	568	78
Acetylene	8	1
	730	

	ppbC
Total Unidentified Hydrocarbons	180
Total NMHC by summing individual species	910

TABLE F2. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1140 ON 7/25/79 IN WEST PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	14.0	2,3-Dimethylpentane
6.0	Ethylene	15.5	3-Methylhexane
6.0	Acetylene	10.5	2,2,3-Trimethylpentane
23.5	Propane	11.5	n-Heptane
6.0	Propene	8.5	Methylcyclohexane
26.5	i-Butane	5.0	2,4-Dimethylhexane
155	n-Butane	3.0	2,3,4-Trimethylpentane
6.5	1-Butene	76.5	Toluene
5.0	i-Butene	3.0	2,3-Dimethylhexane
11.5	t-2-Butene	10.0	2-Methylheptane
---	c-2-Butene	8.5	3-Ethylhexane
145	i-Pentane	7.5	n-Octane
80.0	n-Pentane	---	Ethylcyclohexane
12.5	1-Pentene	17.5	Ethylbenzene
---	t-2-Pentene	51.5	p & m-Xylene
---	c-2-Pentene	7.0	Styrene
2.0	Cyclopentene	26.0	o-Xylene
6.5	Cyclopentane	5.5	n-Nonane
8.5	2,3-Dimethylbutane	4.5	i-Propylbenzene
32.0	2-Methylpentane	9.0	n-Propylbenzene
3.0	c-4-Methyl-2-pentene	17.0	p-Ethyltoluene
23.5	3-Methylpentane	11.0	m-Ethyltoluene
14.5	1-Hexene	30.5	o-Ethyltoluene
21.5	n-Hexane	11.0	1,3,5-Trimethylbenzene
3.5	t-2-Hexene	6.5	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
15.5	Methylcyclopentane	7.5	Methylstyrene
5.4	2,4-Dimethylpentane	4.5	1,3-Diethylbenzene
20.0	Benzene	2.0	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	74	7
Σ Aromatic	284	27
Σ Paraffin	676	65
Acetylene	6	1
	1040	

	ppbC
Total Unidentified Hydrocarbons	230
Total NMHC by summing individual species	1270

TABLE F3. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1015 ON 8/2/79 IN NE PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
5.5	Ethane	3.0	2,3-Dimethylpentane
10.0	Ethylene	4.5	3-Methylhexane
5.5	Acetylene	4.0	2,2,3-Trimethylpentane
12.0	Propane	2.5	n-Heptane
5.0	Propene	2.0	Methylcyclohexane
11.0	i-Butane	1.5	2,4-Dimethylhexane
29.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	12.5	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
27.0	i-Pentane	1.0	n-Octane
16.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	9.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.0	o-Xylene
1.5	Cyclopentane	---	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
9.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
3.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	4.5	o-Ethyltoluene
8.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.0	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	16	7
Σ Aromatic	47	21
Σ Paraffin	152	69
Acetylene	6	2
	221	

	ppbC
Total Unidentified Hydrocarbons	48
Total NMHC by summing individual species	269

TABLE F4. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/2/79 IN SW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.5	Ethane	1.5	2,3-Dimethylpentane
2.0	Ethylene	1.5	3-Methylhexane
2.5	Acetylene	2.0	2,2,3-Trimethylpentane
21.0	Propane	1.5	n-Heptane
12.5	Propene	1.0	Methylcyclohexane
8.5	i-Butane	1.5	2,4-Dimethylhexane
38.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	5.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	0.5	3-Ethylhexane
17.0	i-Pentane	---	n-Octane
11.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	3.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
1.0	Cyclopentane	---	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
4.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
2.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	1.5	o-Ethyltoluene
5.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.0	Benzene	---	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	14	9
Σ Aromatic	16	10
Σ Paraffin	134	80
Acetylene	3	1
	167	

	ppbC
Total Unidentified Hydrocarbons	11
Total NMHC by summing individual species	178

TABLE F5. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1200 ON 8/4/79
AT FLAT ROCK PARK; NW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.0	**Ethane**	3.0	**2,3-Dimethylpentane**
8.0	**Ethylene**	3.0	**3-Methylhexane**
9.0	**Acetylene**	3.0	**2,2,3-Trimethylpentane**
16.5	**Propane**	2.5	**n-Heptane**
3.0	**Propene**	1.5	**Methylcyclohexane**
11.5	**i-Butane**	1.0	**2,4-Dimethylhexane**
29.5	**n-Butane**	---	**2,3,4-Trimethylpentane**
---	**1-Butene**	13.5	**Toluene**
---	**i-Butene**	0.5	**2,3-Dimethylhexane**
---	**t-2-Butene**	1.5	**2-Methylheptane**
---	**c-2-Butene**	2.5	**3-Ethylhexane**
25.5	**i-Pentane**	1.0	**n-Octane**
15.5	**n-Pentane**	---	**Ethylcyclohexane**
---	**1-Pentene**	2.0	**Ethylbenzene**
---	**t-2-Pentene**	4.5	**p & m-Xylene**
---	**c-2-Pentene**	---	**Styrene**
---	**Cyclopentene**	2.5	**o-Xylene**
1.0	**Cyclopentane**	---	**n-Nonane**
1.5	**2,3-Dimethylbutane**	---	**i-Propylbenzene**
7.5	**2-Methylpentane**	1.0	**n-Propylbenzene**
---	**c-4-Methyl-2-pentene**	1.0	**p-Ethyltoluene**
4.5	**3-Methylpentane**	1.0	**m-Ethyltoluene**
---	**1-Hexene**	2.0	**o-Ethyltoluene**
9.0	**n-Hexane**	1.0	**1,3,5-Trimethylbenzene**
---	**t-2-Hexene**	1.0	**1,2,4-Trimethylbenzene**
---	**c-2-Hexene**	---	**1,2,3-Trimethylbenzene**
2.5	**Methylcyclopentane**	---	**Methylstyrene**
2.0	**2,4-Dimethylpentane**	---	**1,3-Diethylbenzene**
5.5	**Benzene**	---	**1,4-Diethylbenzene**
1.5	**Cyclohexane**		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	11	5
Σ Aromatic	36	17
Σ Paraffin	154	74
Acetylene	9	4
	210	

	ppbC
Total Unidentified Hydrocarbons	12
Total NMHC by summing individual species	222

TABLE F6. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1355 ON 8/4/79 IN NW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
5.5	Ethane	---	2,3-Dimethylpentane
2.0	Ethylene	---	3-Methylhexane
5.0	Acetylene	---	2,2,3-Trimethylpentane
9.0	Propane	---	n-Heptane
3.5	Propene	---	Methylcyclohexane
4.5	i-Butane	---	2,4-Dimethylhexane
11.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	4.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
8.0	i-Pentane	---	n-Octane
6.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
2.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
1.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
1.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	5	8	Total Unidentified Hydrocarbons	49
Σ Aromatic	11	15		
Σ Paraffin	49	70	Total NMHC by summing individual species	119
Acetylene	5	7		
	70			

TABLE F7. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 0700 ON 8/5/79 NEAR DOWNINGTOWN, PENNSYLVANIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.5	Ethane	1.5	2,3-Dimethylpentane
2.5	Ethylene	1.5	3-Methylhexane
5.0	Acetylene	2.0	2,2,3-Trimethylpentane
11.5	Propane	1.0	n-Heptane
2.5	Propene	1.0	Methylcyclohexane
7.0	i-Butane	---	2,4-Dimethylhexane
15.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	6.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	0.5	3-Ethylhexane
15.0	i-Pentane	---	n-Octane
9.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	3.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
0.5	Cyclopentane	---	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
5.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
3.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
5.0	n-Hexane	2.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.0	Benzene	---	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	5	4	Total Unidentified Hydrocarbons	21
Σ Aromatic	24	19		
Σ Paraffin	93	73	Total NMHC by summing individual species	149
Acetylene	5	4		
	128			

TABLE F8. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/6/79 IN NW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
8.0	Ethane	1.0	2,3-Dimethylpentane
2.5	Ethylene	1.5	3-Methylhexane
3.0	Acetylene	2.0	2,2,3-Trimethylpentane
7.5	Propane	1.5	n-Heptane
---	Propene	1.0	Methylcyclohexane
5.5	i-Butane	1.0	2,4-Dimethylhexane
11.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	7.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
10.5	i-Pentane	---	n-Octane
7.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
---	Cyclopentane	---	n-Nonane
0.5	2,3-Dimethylbutane	---	i-Propylbenzene
4.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
2.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	1.0	o-Ethyltoluene
4.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.0	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	2	3	Total Unidentified Hydrocarbons	8
Σ Aromatic	17	18		
Σ Paraffin	71	76	Total NMHC by summing individual species	102
Acetylene	3	3		
	94			

TABLE F9 . HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED 1305 ON
8/7/79 AT FLAT ROCK PARK; NW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	1.5	2,3-Dimethylpentane
2.5	Ethylene	1.5	3-Methylhexane
4.0	Acetylene	4.0	2,2,3-Trimethylpentane
4.5	Propane	1.5	n-Heptane
---	Propene	---	Methylcyclohexane
6.5	i-Butane	---	2,4-Dimethylhexane
12.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	6.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
13.5	i-Pentane	---	n-Octane
6.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
0.5	Cyclopentane	---	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
4.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
2.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
4.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.0	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	3	3	Total Unidentified Hydrocarbons	16
Σ Aromatic	14	16		
Σ Paraffin	70	77	Total NMHC by summing individual species	108
Acetylene	4	4		
	92			

TABLE F10. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1345 ON 8/7/79 AT JUNCTION OF HIGHWAYS 252 AND 202

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	1.0	2,3-Dimethylpentane
2.5	Ethylene	1.5	3-Methylhexane
1.5	Acetylene	2.0	2,2,3-Trimethylpentane
4.5	Propane	1.0	n-Heptane
2.0	Propene	---	Methylcyclohexane
7.0	i-Butane	---	2,4-Dimethylhexane
22.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	7.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
19.0	i-Pentane	---	n-Octane
10.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	2.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.0	o-Xylene
0.5	Cyclopentane	1.5	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
4.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
2.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	0.5	o-Ethyltoluene
5.0	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.0	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	4	4
Σ Aromatic	18	16
Σ Paraffin	88	78
Acetylene	1	1
	113	

	ppbC
Total Unidentified Hydrocarbons	8
Total NMHC by summing individual species	121

TABLE F11. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/10/79 NEAR WEST CHESTER PENNSYLVANIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.8	Ethane	16.5	2,3-Dimethylpentane
5.3	Ethylene	18.8	3-Methylhexane
---	Acetylene	6.0	2,2,3-Trimethylpentane
18.0	Propane	12.8	n-Heptane
3.0	Propene	13.5	Methylcyclohexane
57.0	i-Butane	3.0	2,4-Dimethylhexane
149	n-Butane	2.3	2,3,4-Trimethylpentane
6.8	1-Butene	24.0	Toluene
12.0	i-Butene	3.0	2,3-Dimethylhexane
6.0	t-2-Butene	8.3	2-Methylheptane
---	c-2-Butene	6.0	3-Ethylhexane
125	i-Pentane	3.8	n-Octane
62.3	n-Pentane	1.5	Ethylcyclohexane
14.3	1-Pentene	6.0	Ethylbenzene
5.3	t-2-Pentene	15.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
1.5	Cyclopentene	7.5	o-Xylene
7.5	Cyclopentane	.8	n-Nonane
9.8	2,3-Dimethylbutane	---	i-Propylbenzene
45.8	2-Methylpentane	---	n-Propylbenzene
3.8	c-4-Methyl-2-pentene	3.0	p-Ethyltoluene
30.0	3-Methylpentane	1.5	m-Ethyltoluene
2.3	1-Hexene	1.5	o-Ethyltoluene
30.8	n-Hexane	---	1,3,5-Trimethylbenzene
3.8	t-2-Hexene	---	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	---	1,2,3-Trimethylbenzene
24.0	Methylcyclopentane	---	Methylstyrene
5.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
11.3	Benzene	---	1,4-Diethylbenzene
8.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	69	8
Σ Aromatic	70	9
Σ Paraffin	675	83
Acetylene	---	---
	814	

	ppbC
Total Unidentified Hydrocarbons	93
Total NMHC by summing individual species	907

TABLE F12. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/14/79 NEAR WEST CHESTER PENNSYLVANIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
9.8	Ethane	3.0	2,3-Dimethylpentane
18.0	Ethylene	3.8	3-Methylhexane
15.8	Acetylene	3.8	2,2,3-Trimethylpentane
15.8	Propane	3.0	n-Heptane
7.5	Propene	3.0	Methylcyclohexane
7.5	i-Butane	1.5	2,4-Dimethylhexane
23.3	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	13.5	Toluene
---	i-Butene	.8	2,3-Dimethylhexane
---	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
27.8	i-Pentane	1.5	n-Octane
14.3	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	7.5	p & m-Xylene
---	c-2-Pentene	.8	Styrene
---	Cyclopentene	3.0	o-Xylene
1.5	Cyclopentane	---	n-Nonane
2.3	2,3-Dimethylbutane	---	i-Propylbenzene
9.0	2-Methylpentane	.8	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.3	p-Ethyltoluene
5.3	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	5.3	o-Ethyltoluene
7.5	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.8	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.8	Benzene	---	1,4-Diethylbenzene
2.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	26	11
Σ Aromatic	47	19
Σ Paraffin	155	64
Acetylene	16	6
	244	

	ppbC
Total Unidentified Hydrocarbons	32
Total NMHC by summing individual species	276

TABLE F13. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 0950 ON 8/16/79 AT FLAT ROCK PARK; NW PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.5	Ethane	---	2,3-Dimethylpentane
2.0	Ethylene	---	3-Methylhexane
13.5	Acetylene	---	2,2,3-Trimethylpentane
11.5	Propane	---	n-Heptane
12.5	Propene	---	Methylcyclohexane
16.0	i-Butane	---	2,4-Dimethylhexane
8.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	3.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
5.0	i-Pentane	---	n-Octane
3.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.0	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
1.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
1.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	0.5	o-Ethyltoluene
1.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
1.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	14.5	16	Total Unidentified Hydrocarbons	5
Σ Aromatic	9.5	11		
Σ Paraffin	60.0	58	Total NMHC by summing individual species	94
Acetylene	13.5	15		
	89			

TABLE F14. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED AT 1150 ON 8/16/79 IN SE PHILADELPHIA

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.5	Ethane	---	2,3-Dimethylpentane
2.0	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
2.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
2.5	i-Butane	---	2,4-Dimethylhexane
6.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	5.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
5.5	i-Pentane	---	n-Octane
3.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	1.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.0	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
2.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
1.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
2.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	2.0	4
Σ Aromatic	13.0	30
Σ Paraffin	28.0	66
Acetylene	---	---
	43	

	ppbC
Total Unidentified Hydrocarbons	8
Total NMHC by summing individual species	51

APPENDIX G

Individual Hydrocarbon Concentrations in Helicopter Samples Collected by EPA-LV

HYDROCARBON GRAB SAMPLE LIST

DATE	TIME (EDT)	SITE	ALTITUDE METERS (MSL)	FLIGHT PATTERN	REMARKS AND FLIGHT PATTERNS
23 July 79	13:06:33	6	456	SW	Second flight of day.(FOD)
	13:08:58	6	24	SW	
23 July 79	15:58:37	6	456	SW	3rd FOD
	16:01:58	6	27	SW	
25 July 79	07:37:32	2	456	W	1st FOD - Second sample was taken directly over a sewage treatment plant.
	07:40:09	2	122	W	
25 July 79	10:57:50	6	456	W	2nd FOD
	11:01:05	6	46	W	
4 Aug 79	11:22:37	6	456	W	2nd FOD - No 1st FOD due to inclement weather. 456 meter sample was taken within what appeared to be a plume.
	11:27:10	6	24	W	
5 Aug 79	09:42:33	6	456	W	1st FOD
	09:46:30	6	24	W	
6 Aug 79	07:06:20	9	456	NW	1st FOD
	07:10:00	9	67	NW	
6 Aug 79	10:57:52	6	486	NW	2nd FOD
	11:02:04	6	18	NW	
7 Aug 79	07:06:00	9	456	NW	1st FOD
	07:08:00	9	45	NW	
7 Aug 79	10:36:19	6	456	NW	2nd FOD
	10:39:30	6	30	NW	
10 Aug 79	07:21:30	2	456	W	1st FOD - Due to heavy ground fog, aircraft could not descend low enough to take 2nd grab sample.
10 Aug 79	10:38:49	6	486	W	2nd FOD
	10:42:39	6	18	W	

DATE	TIME (EDT)	SITE	ALTITUDE METERS (MSL)	FLIGHT PATTERN	REMARKS AND FLIGHT PATTERNS
14 Aug 79	07:20:40	2	462	W	1st FOD
	07:23:35	2	116	W	
14 Aug 79	10:46:59	6	456	W	2nd FOD
	10:50:01	6	30	W	
15 Aug 79	07:36:14	11	456	NW	1st FOD
	07:39:54	11	106	NW	
15 Aug 79	11:01:11	6	456	NW	2nd FOD
	11:04:30	6	30	NW	
16 Aug 79	06:51:30	11	456	NW	1st FOD
	06:53:55	11	152	NW	
16 Aug 79	10:27:00	6	456	NW	2nd FOD
	10:29:14	6	24	NW	- This cannister is a blank; it was never filled with a sample because mechanical problems with helicopter prevented completion of flight. Submitted at the request of the technical coordinator.

TABLE G1. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1306 DURING FLIGHT OF 7/23/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	1.5	2,3-Dimethylpentane
	Ethylene	3.0	3-Methylhexane
1.0	Acetylene	2.3	2,2,3-Trimethylpentane
13.5	Propane	1.5	n-Heptane
5.3	Propene	1.5	Methylcyclohexane
9.8	i-Butane	---	2,4-Dimethylhexane
15.8	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	6.0	Toluene
1.5	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
15.8	i-Pentane	1.5	n-Octane
7.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	2.3	o-Xylene
---	Cyclopentane	0.8	n-Nonane
3.0	2,3-Dimethylbutane	---	i-Propylbenzene
3.8	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
2.3	3-Methylpentane	0.8	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
3.8	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	8	6	Total Unidentified Hydrocarbons	14
Σ Aromatic	24	19		
Σ Paraffin	95	74	Total NMHC by summing individual species	143
Acetylene	2 129	2		

TABLE G2. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1209 DURING FLIGHT OF 7/23/79 OVER SITE 6 (90')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.8	Ethane	0.8	2,3-Dimethylpentane
4.5	Ethylene	1.5	3-Methylhexane
1.5	Acetylene	---	2,2,3-Trimethylpentane
6.0	Propane	0.8	n-Heptane
2.3	Propene	0.8	Methylcyclohexane
4.5	i-Butane	---	2,4-Dimethylhexane
8.3	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	3.8	Toluene
0.8	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
9.8	i-Pentane	---	n-Octane
3.8	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	1.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	0.8	o-Xylene
---	Cyclopentane	0.8	n-Nonane
0.8	2,3-Dimethylbutane	---	i-Propylbenzene
2.3	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
1.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
3.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
0.8	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	9	11
Σ Aromatic	19	23
Σ Paraffin	51	63
Acetylene	2	2
	81	

	ppbC
Total Unidentified Hydrocarbons	36
Total NMHC by summing individual species	117

TABLE G3. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1558 DURING FLIGHT OF 7/23/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.0	Ethane	0.8	2,3-Dimethylpentane
(19.5)	Ethylene	1.5	3-Methylhexane
2.3	Acetylene	---	2,2,3-Trimethylpentane
5.3	Propane	0.8	n-Heptane
1.5	Propene	---	Methylcyclohexane
4.5	i-Butane	---	2,4-Dimethylhexane
10.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	4.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
9.0	i-Pentane	---	n-Octane
3.8	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	0.8	Ethylbenzene
---	t-2-Pentene	1.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
---	Cyclopentane	---	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
3.8	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
2.3	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	0.8	o-Ethyltoluene
4.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	0.8	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.3	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	2	3
Σ Aromatic	15	21
Σ Paraffin	53	73
Acetylene	2	3
	72	

	ppbC
Total Unidentified Hydrocarbons	22
Total NMHC by summing individual species	94

TABLE G4. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1601 DURING FLIGHT OF 7/23/79 OVER SITE 6 (80')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
2.3	Ethane	0.8	2,3-Dimethylpentane
6.0	Ethylene	1.5	3-Methylhexane
3.0	Acetylene	1.5	2,2,3-Trimethylpentane
6.0	Propane	---	n-Heptane
0.8	Propene	---	Methylcyclohexane
5.3	i-Butane	---	2,4-Dimethylhexane
12.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	7.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
9.0	i-Pentane	0.8	n-Octane
4.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	8.3	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.5	o-Xylene
---	Cyclopentane	0.8	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
3.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
1.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	6.0	o-Ethyltoluene
3.0	n-Hexane	3.8	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
0.8	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	2.3	1,3-Diethylbenzene
2.3	Benzene	1.5	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	8	7
Σ Aromatic	49	43
Σ Paraffin	54	47
Acetylene	3	3
	115	

	ppbC
Total Unidentified Hydrocarbons	42
Total NMHC by summing individual species	157

TABLE G5. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0737 DURING FLIGHT OF 7/25/79 (1500') OVER SITE 2

ppbC	Hydrocarbon	ppbC	Hydrocarbon
2.3	Ethane	---	2,3-Dimethylpentane
(9.0)	Ethylene	---	3-Methylhexane
0.8	Acetylene	---	2,2,3-Trimethylpentane
0.8	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
0.8	i-Butane	---	2,4-Dimethylhexane
3.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	1.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
3.0	i-Pentane	---	n-Octane
1.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
0.8	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
1.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
1.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	--	--
Σ Aromatic	6	29
Σ Paraffin	14	67
Acetylene	1	4
	21	

	ppbC
Total Unidentified Hydrocarbons	7
Total NMHC by summing individual species	28

TABLE G6. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0740 DURING FLIGHT OF 7/25/79 OVER SITE 2 (400')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	1.5	2,3-Dimethylpentane
6.8	Ethylene	1.5	3-Methylhexane
6.0	Acetylene	2.3	2,2,3-Trimethylpentane
7.5	Propane	0.8	n-Heptane
1.5	Propene	0.8	Methylcyclohexane
3.8	i-Butane	---	2,4-Dimethylhexane
9.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	6.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
12.8	i-Pentane	---	n-Octane
6.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	3.8	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	2.3	o-Xylene
0.8	Cyclopentane	1.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
4.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
3.0	3-Methylpentane	2.3	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
6.0	n-Hexane	5.3	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
2.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.3	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	8	7
Σ Aromatic	25	22
Σ Paraffin	72	65
Acetylene	6	5
	112	

	ppbC
Total Unidentified Hydrocarbons	32
Total NMHC by summing individual species	144

TABLE G7. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1037 DURING FLIGHT OF 7/25/79 (1500') OVER SITE 6

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	12.0	2,3-Dimethylpentane
6.0	Ethylene	13.5	3-Methylhexane
5.3	Acetylene	6.0	2,2,3-Trimethylpentane
24.8	Propane	10.5	n-Heptane
8.3	Propene	9.8	Methylcyclohexane
18.0	i-Butane	3.0	2,4-Dimethylhexane
34.5	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	28.5	Toluene
---	i-Butene	1.5	2,3-Dimethylhexane
---	t-2-Butene	8.3	2-Methylheptane
---	c-2-Butene	5.3	3-Ethylhexane
36.8	i-Pentane	6.0	n-Octane
18.0	n-Pentane	2.3	Ethylcyclohexane
---	1-Pentene	4.5	Ethylbenzene
---	t-2-Pentene	9.8	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	6.0	o-Xylene
2.3	Cyclopentane	3.8	n-Nonane
5.3	2,3-Dimethylbutane	---	i-Propylbenzene
21.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
17.3	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
15.8	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
9.8	Methylcyclopentane	---	Methylstyrene
3.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
30.0	Benzene	---	1,4-Diethylbenzene
5.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	19	5
Σ Aromatic	86	21
Σ Paraffin	305	73
Acetylene	5	1
	415	

	ppbC
Total Unidentified Hydrocarbons	89
Total NMHC by summing individual species	504

TABLE G8. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1101 DURING FLIGHT OF 7/25/79 (1500') OVER SITE 6

ppbC	Hydrocarbon	ppbC	Hydrocarbon
7.5	Ethane	4.5	2,3-Dimethylpentane
7.5	Ethylene	5.3	3-Methylhexane
6.0	Acetylene	4.5	2,2,3-Trimethylpentane
24.0	Propane	4.5	n-Heptane
5.3	Propene	4.5	Methylcyclohexane
33.0	i-Butane	2.3	2,4-Dimethylhexane
52.5	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	15.0	Toluene
1.5	i-Butene	---	2,3-Dimethylhexane
0.8	t-2-Butene	3.8	2-Methylheptane
---	c-2-Butene	2.3	3-Ethylhexane
42.0	i-Pentane	3.0	n-Octane
22.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.3	Ethylbenzene
---	t-2-Pentene	5.3	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.8	o-Xylene
2.3	Cyclopentane	2.3	n-Nonane
4.5	2,3-Dimethylbutane	---	i-Propylbenzene
10.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
6.8	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.3	o-Ethyltoluene
9.8	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.8	Methylcyclopentane	---	Methylstyrene
2.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
12.8	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	17	~~5~~
Σ Aromatic	44	13
Σ Paraffin	263	80
Acetylene	6	2
	329	

	ppbC
Total Unidentified Hydrocarbons	53
Total NMHC by summing individual species	382

TABLE G9. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1123 DURING FLIGHT OF 8/4/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.0	Ethane	3.5	2,3-Dimethylpentane
22.0	Ethylene	4.0	3-Methylhexane
12.0	Acetylene	4.0	2,2,3-Trimethylpentane
15.5	Propane	3.0	n-Heptane
4.0	Propene	2.0	Methylcyclohexane
18.5	i-Butane	1.5	2,4-Dimethylhexane
45.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	17.0	Toluene
---	i-Butene	0.5	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
41.5	i-Pentane	1.0	n-Octane
23.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.0	o-Xylene
1.0	Cyclopentane	6.0	n-Nonane
2.5	2,3-Dimethylbutane	17.5	i-Propylbenzene
9.0	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
5.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
9.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.0	Benzene	---	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	27	9
Σ Aromatic	68	22
Σ Paraffin	207	66
Acetylene	12	4
	314	

	ppbC
Total Unidentified Hydrocarbons	17
Total NMHC by summing individual species	331

TABLE G10 . HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1127 DURING FLIGHT OF 8/4/79 OVER SITE 6 (90')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.5	Ethane	4.0	2,3-Dimethylpentane
22.0	Ethylene	4.5	3-Methylhexane
17.5	Acetylene	5.0	2,2,3-Trimethylpentane
23.0	Propane	3.5	n-Heptane
6.0	Propene	2.0	Methylcyclohexane
29.5	i-Butane	1.5	2,4-Dimethylhexane
66.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	19.5	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
60.0	i-Pentane	1.5	n-Octane
33.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.5	Ethylbenzene
---	t-2-Pentene	7.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.5	o-Xylene
1.5	Cyclopentane	1.0	n-Nonane
2.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
9.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
6.0	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	3.5	o-Ethyltoluene
11.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.0	Methylcyclopentane	---	Methylstyrene
2.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
7.0	Benzene	---	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	29	7
Σ Aromatic	53	14
Σ Paraffin	292	74
Acetylene	18	4
	393	

	ppbC
Total Unidentified Hydrocarbons	37
Total NMHC by summing individual species	430

TABLE G11. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0942 DURING FLIGHT OF 8/5/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
5.0	Ethane	---	2,3-Dimethylpentane
(42.5)	Ethylene	---	3-Methylhexane
1.5	Acetylene	---	2,2,3-Trimethylpentane
4.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
2.5	i-Butane	---	2,4-Dimethylhexane
4.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	1.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
12.0	i-Pentane	---	n-Octane
4.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
2.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	--	--
Σ Aromatic	2	5
Σ Paraffin	35	90
Acetylene	2	5
	39	

	ppbC
Total Unidentified Hydrocarbons	20
Total NMHC by summing individual species	59

TABLE G12. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0946 DURING FLIGHT OF 8/5/79 OVER SITE 6 (80')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
15.0	Ethane	4.0	2,3-Dimethylpentane
10.0	Ethylene	4.5	3-Methylhexane
15.0	Acetylene	5.0	2,2,3-Trimethylpentane
18.0	Propane	4.5	n-Heptane
6.5	Propene	2.0	Methylcyclohexane
22.0	i-Butane	1.0	2,4-Dimethylhexane
48.5	n-Butane	---	2,3,4-Trimethylpentane
1.5	1-Butene	30.0	Toluene
2.0	i-Butene	1.0	2,3-Dimethylhexane
1.5	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
46.5	i-Pentane	3.0	n-Octane
27.0	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	5.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	4.5	o-Xylene
1.0	Cyclopentane	2.0	n-Nonane
2.5	2,3-Dimethylbutane	1.0	i-Propylbenzene
8.5	2-Methylpentane	5.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.0	p-Ethyltoluene
5.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	3.5	o-Ethyltoluene
9.0	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
9.5	Benzene	---	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	23	7
Σ Aromatic	73	21
Σ Paraffin	240	68
Acetylene	15	4
	351	

	ppbC
Total Unidentified Hydrocarbons	96
Total NMHC by summing individual species	447

TABLE G13 HYDROCARBON CONCENTRATIONS IN SAMPLE COLELCTED AT 0706 DURING FLIGHT 1 OF 8/6/79 (1500') OVER SITE 9

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	---	2,3-Dimethylpentane
(34.0)	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
4.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
2.0	i-Butane	---	2,4-Dimethylhexane
3.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	1.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
3.0	i-Pentane	---	n-Octane
1.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane	---	

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	--	--
Σ Aromatic	2	9
Σ Paraffin	21	91
Acetylene	---	---
	23	

	ppbC
Total Unidentified Hydrocarbons	---
Total NMHC by summing individual species	23

TABLE G14. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0710 DURING FLIGHT 1 OF 8/6/79 OVER SITE 9 (220')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
14.0	Ethane	1.0	2,3-Dimethylpentane
34.0	Ethylene	1.0	3-Methylhexane
---	Acetylene	1.5	2,2,3-Trimethylpentane
14.0	Propane	.10	n-Heptane
---	Propene	---	Methylcyclohexane
15.5	i-Butane	---	2,4-Dimethylhexane
14.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	4.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
14.5	i-Pentane	---	n-Octane
7.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
---	Cyclopentane	1.0	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
3.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
1.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
2.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	4.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.0	Methylcyclopentane	0.5	Methylstyrene
---	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
2.0	Benzene	1.0	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	35	23
Σ Aromatic	22	14
Σ Paraffin	97	63
Acetylene	---	---
	153	

	ppbC
Total Unidentified Hydrocarbons	7
Total NMHC by summing individual species	160

TABLE G15. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1057 DURING FLIGHT 2 OF 8/6/79 OVER SITE 6 (1600')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.0	Ethane	3.0	2,3-Dimethylpentane
21.0	Ethylene	3.0	3-Methylhexane
7.5	Acetylene	3.0	2,2,3-Trimethylpentane
14.0	Propane	2.5	n-Heptane
6.0	Propene	1.5	Methylcyclohexane
37.0	i-Butane	1.0	2,4-Dimethylhexane
50.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	19.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.5	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
35.0	i-Pentane	1.5	n-Octane
21.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	3.0	o-Xylene
1.5	Cyclopentane	1.0	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
8.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
5.0	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	2.0	o-Ethyltoluene
8.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.0	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	27	9	Total Unidentified Hydrocarbons	35
Σ Aromatic	42	14		
Σ Paraffin	221	74	Total NMHC by summing individual species	332
Acetylene	8	3		
	297			

TABLE G16. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1102 DURING FLIGHT 2 OF 8/6/79 (60') OVER SITE 6

ppbC	Hydrocarbon	ppbC	Hydrocarbon
10.5	Ethane	3.5	2,3-Dimethylpentane
11.5	Ethylene	4.5	3-Methylhexane
3.5	Acetylene	2.5	2,2,3-Trimethylpentane
13.0	Propane	3.0	n-Heptane
2.0	Propene	1.5	Methylcyclohexane
16.0	i-Butane	1.5	2,4-Dimethylhexane
39.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	21.0	Toluene
---	i-Butene	1.0	2,3-Dimethylhexane
---	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
35.5	i-Pentane	2.0	n-Octane
22.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	7.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.5	o-Xylene
1.0	Cyclopentane	1.5	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
10.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
6.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
13.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
3.5	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.0	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	15	5
Σ Aromatic	49	18
Σ Paraffin	204	75
Acetylene	4	1
	271	

	ppbC
Total Unidentified Hydrocarbons	27
Total NMHC by summing individual species	298

TABLE G17. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0706 DURING FLIGHT 1 OF 8/7/79 (1500') OVER SITE 9

ppbC	Hydrocarbon	ppbC	Hydrocarbon
5.5	Ethane	---	2,3-Dimethylpentane
4.0	Ethylene	---	3-Methylhexane
1.5	Acetylene	---	2,2,3-Trimethylpentane
3.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
2.0	i-Butane	---	2,4-Dimethylhexane
4.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	2.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
5.0	i-Pentane	---	n-Octane
2.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	1.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
1.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	4	12
Σ Aromatic	3	9
Σ Paraffin	25	74
Acetylene	2	5
	34	

	ppbC
Total Unidentified Hydrocarbons	3
Total NMHC by summing individual species	37

TABLE G18. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0708 DURING FLIGHT 1 OF 8/7/79 OVER SITE 9 (150')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.5	Ethane	---	2,3-Dimethylpentane
1.5	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
1.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
1.5	i-Butane	---	2,4-Dimethylhexane
1.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	2.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
3.5	i-Pentane	---	n-Octane
1.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	1.0	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	2	9
Σ Aromatic	4	19
Σ Paraffin	13	72
Acetylene	--	---
	19	

	ppbC
Total Unidentified Hydrocarbons	7
Total NMHC by summing individual species	26

TABLE G19. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1036 DURING FLIGHT 2 OF 8/7/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
11.5	Ethane	3.5	2,3-Dimethylpentane
31.5	Ethylene	4.0	3-Methylhexane
7.5	Acetylene	3.0	2,2,3-Trimethylpentane
14.0	Propane	3.0	n-Heptane
4.5	Propene	2.0	Methylcyclohexane
14.5	i-Butane	1.0	2,4-Dimethylhexane
34.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	16.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
31.5	i-Pentane	1.5	n-Octane
17.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	5.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	2.5	o-Xylene
1.0	Cyclopentane	1.0	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
6.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.5	p-Ethyltoluene
4.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	12.5	o-Ethyltoluene
11.0	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
6.0	Benzene	---	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	39	13
Σ Aromatic	49	20
Σ Paraffin	177	64
Acetylene	8	3
	273	

	ppbC
Total Unidentified Hydrocarbons	32
Total NMHC by summing individual species	305

TABLE G2Q HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1039 DURING FLIGHT OF 8/7/79 OVER SITE 6 (100')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	5.0	2,3-Dimethylpentane
7.0	Ethylene	6.0	3-Methylhexane
2.5	Acetylene	2.5	2,2,3-Trimethylpentane
11.0	Propane	5.0	n-Heptane
3.0	Propene	3.5	Methylcyclohexane
12.0	i-Butane	1.5	2,4-Dimethylhexane
25.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	16.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	1.5	3-Ethylhexane
25.0	i-Pentane	1.0	n-Octane
14.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	3.0	o-Xylene
1.0	Cyclopentane	1.0	n-Nonane
2.0	2,3-Dimethylbutane	---	i-Propylbenzene
7.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
5.0	3-Methylpentane	1.0	m-Ethyltoluene
---	1-Hexene	2.0	o-Ethyltoluene
10.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.5	Benzene	---	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	5
Σ Aromatic	42	21
Σ Paraffin	147	73
Acetylene	3	1
	201	

	ppbC
Total Unidentified Hydrocarbons	29
Total NMHC by summing individual species	230

TABLE G21 . HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0721 DURING FLIGHT OF 8/10/79 OVER SITE 2 (1600')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
12.0	Ethane	---	2,3-Dimethylpentane
---	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
10.0	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
12.0	i-Butane	---	2,4-Dimethylhexane
14.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	3.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
21.5	i-Pentane	---	n-Octane
9.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	1.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
1.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
0.5	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.0	o-Ethyltoluene
2.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
1.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	---	---
Σ Aromatic	9.5	10
Σ Paraffin	82.5	90
Acetylene	---	---
	92	

	ppbC
Total Unidentified Hydrocarbons	7
Total NMHC by summing individual species	99

TABLE G22. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1039 DURING FLIGHT OF 8/10/79 OVER SITE 6 (1600')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
82.5	Ethane	3.0	2,3-Dimethylpentane
12.0	Ethylene	9.0	3-Methylhexane
---	Acetylene	4.5	2,2,3-Trimethylpentane
135.	Propane	9.8	n-Heptane
26.3	Propene	10.5	Methylcyclohexane
81.8	i-Butane	1.5	2,4-Dimethylhexane
119.	n-Butane	---	2,3,4-Trimethylpentane
4.5	1-Butene	15.0	Toluene
6.8	i-Butene	1.5	2,3-Dimethylhexane
3.8	t-2-Butene	3.0	2-Methylheptane
2.3	c-2-Butene	3.0	3-Ethylhexane
99.0	i-Pentane	4.5	n-Octane
48.0	n-Pentane	3.0	Ethylcyclohexane
5.3	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	4.5	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.0	o-Xylene
4.5	Cyclopentane	2.3	n-Nonane
5.3	2,3-Dimethylbutane	2.3	i-Propylbenzene
21.0	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
12.8	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	1.5	o-Ethyltoluene
21.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
10.5	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
17.3	Benzene	---	1,4-Diethylbenzene
7.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	63	8
Σ Aromatic	53	6
Σ Paraffin	704	86
Acetylene	---	---
	819	

	ppbC
Total Unidentified Hydrocarbons	56
Total NMHC by summing individual species	875

TABLE G23. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1042 DURING FLIGHT OF 8/10/79 OVER SITE 6 (60')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
22.5	Ethane	5.3	2,3-Dimethylpentane
7.5	Ethylene	6.8	3-Methylhexane
5.3	Acetylene	4.5	2,2,3-Trimethylpentane
113.0	Propane	6.8	n-Heptane
16.5	Propene	7.5	Methylcyclohexane
57.8	i-Butane	2.3	2,4-Dimethylhexane
95.3	n-Butane	---	2,3,4-Trimethylpentane
4.5	1-Butene	17.3	Toluene
1.5	i-Butene	1.5	2,3-Dimethylhexane
3.0	t-2-Butene	2.3	2-Methylheptane
1.5	c-2-Butene	4.5	3-Ethylhexane
69.0	i-Pentane	3.0	n-Octane
39.8	n-Pentane	3.0	Ethylcyclohexane
3.8	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.0	o-Xylene
1.5	Cyclopentane	4.5	n-Nonane
4.5	2,3-Dimethylbutane	3.8	i-Propylbenzene
16.5	2-Methylpentane	1.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
10.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	2.3	o-Ethyltoluene
16.5	n-Hexane	0.8	1,3,5-Trimethylbenzene
---	t-2-Hexene	3.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
7.5	Methylcyclopentane	---	Methylstyrene
3.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
13.5	Benzene	---	1,4-Diethylbenzene
5.3	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	40	6	Total Unidentified Hydrocarbons	82
Σ Aromatic	57	9		
Σ Paraffin	518	84	Total NMHC by summing individual species	702
Acetylene	5 620	1		

TABLE G24. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0720 DURING FLIGHT OF 8/14/79 OVER SITE 2 (1520')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
17.3	Ethane		2,3-Dimethylpentane
---	Ethylene		3-Methylhexane
---	Acetylene		2,2,3-Trimethylpentane
9.8	Propane		n-Heptane
---	Propene		Methylcyclohexane
2.3	i-Butane		2,4-Dimethylhexane
5.3	n-Butane		2,3,4-Trimethylpentane
---	1-Butene		Toluene
---	i-Butene		2,3-Dimethylhexane
---	t-2-Butene		2-Methylheptane
---	c-2-Butene		3-Ethylhexane
5.3	i-Pentane		n-Octane
---	n-Pentane		Ethylcyclohexane
	1-Pentene		Ethylbenzene
	t-2-Pentene		p & m-Xylene
	c-2-Pentene		Styrene
	Cyclopentene		o-Xylene
	Cyclopentane		n-Nonane
	2,3-Dimethylbutane		i-Propylbenzene
	2-Methylpentane		n-Propylbenzene
	c-4-Methyl-2-pentene		p-Ethyltoluene
	3-Methylpentane		m-Ethyltoluene
	1-Hexene		o-Ethyltoluene
	n-Hexane		1,3,5-Trimethylbenzene
	t-2-Hexene		1,2,4-Trimethylbenzene
	c-2-Hexene		1,2,3-Trimethylbenzene
	Methylcyclopentane		Methylstyrene
	2,4-Dimethylpentane		1,3-Diethylbenzene
	Benzene		1,4-Diethylbenzene
	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin			Total Unidentified Hydrocarbons	
Σ Aromatic				
Σ Paraffin			Total NMHC by summing individual species	
Acetylene				

TABLE G25 . HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0723 DURING FLIGHT OF 8/14/79 OVER SITE 2 (380')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
17.5	Ethane	2.0	2,3-Dimethylpentane
31.0	Ethylene	2.5	3-Methylhexane
15.5	Acetylene	2.0	2,2,3-Trimethylpentane
18.0	Propane	2.0	n-Heptane
9.0	Propene	1.5	Methylcyclohexane
14.0	i-Butane	1.0	2,4-Dimethylhexane
37.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	9.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
44.5	i-Pentane	---	n-Octane
24.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.0	Ethylbenzene
---	t-2-Pentene	5.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	2.0	o-Xylene
1.0	Cyclopentane	---	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
6.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
4.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
5.0	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.5	Methylcyclopentane	---	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.0	Benzene	---	1,4-Diethylbenzene
1.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	40	15
Σ Aromatic	30	11
Σ Paraffin	190	69
Acetylene	16	6
	275	

	ppbC
Total Unidentified Hydrocarbons	24
Total NMHC by summing individual species	299

TABLE G26. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1047 DURING FLIGHT OF 8/14/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
32.5	Ethane	3.5	2,3-Dimethylpentane
13.5	Ethylene	4.0	3-Methylhexane
5.5	Acetylene	4.0	2,2,3-Trimethylpentane
58.5	Propane	4.5	n-Heptane
18.5	Propene	3.5	Methylcyclohexane
36.5	i-Butane	1.0	2,4-Dimethylhexane
61.0	n-Butane	---	2,3,4-Trimethylpentane
2.5	1-Butene	10.5	Toluene
2.5	i-Butene	1.0	2,3-Dimethylhexane
1.5	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
49.5	i-Pentane	2.0	n-Octane
26.5	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	2.0	Ethylbenzene
---	t-2-Pentene	4.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	2.5	o-Xylene
2.0	Cyclopentane	1.5	n-Nonane
2.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
12.0	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
7.5	3-Methylpentane	1.0	m-Ethyltoluene
---	1-Hexene	1.5	o-Ethyltoluene
13.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
5.5	Methylcyclopentane	---	Methylstyrene
2.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
9.0	Benzene	---	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	38	9
Σ Aromatic	36	9
Σ Paraffin	340	81
Acetylene	6	1
	420	

	ppbC
Total Unidentified Hydrocarbons	30
Total NMHC by summing individual species	450

TABLE G27. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1050 DURING FLIGHT OF 8/14/79 OVER SITE 6 (100')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
22.5	Ethane	3.0	2,3-Dimethylpentane
12.5	Ethylene	4.0	3-Methylhexane
8.0	Acetylene	3.0	2,2,3-Trimethylpentane
45.5	Propane	3.5	n-Heptane
12.5	Propene	3.0	Methylcyclohexane
29.0	i-Butane	1.5	2,4-Dimethylhexane
56.0	n-Butane	---	2,3,4-Trimethylpentane
2.0	1-Butene	13.0	Toluene
2.0	i-Butene	---	2,3-Dimethylhexane
1.5	t-2-Butene	1.5	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
46.0	i-Pentane	2.5	n-Octane
25.5	n-Pentane	1.5	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	6.0	p & m-Xylene
---	c-2-Pentene	2.0	Styrene
---	Cyclopentene	4.0	o-Xylene
2.0	Cyclopentane	2.5	n-Nonane
2.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
10.0	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
6.5	3-Methylpentane	2.0	m-Ethyltoluene
---	1-Hexene	4.0	o-Ethyltoluene
14.5	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	7.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
4.5	Methylcyclopentane	1.5	Methylstyrene
2.5	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
8.5	Benzene	1.5	1,4-Diethylbenzene
2.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	34	8
Σ Aromatic	61	15
Σ Paraffin	299	75
Acetylene	8	2
	401	

	ppbC
Total Unidentified Hydrocarbons	72
Total NMHC by summing individual species	473

TABLE G28. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED DURING FLIGHT OF 8/15/79 OVER SITE 11 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	---	2,3-Dimethylpentane
---	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
4.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
1.5	i-Butane	---	2,4-Dimethylhexane
3.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	---	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
---	i-Pentane	---	n-Octane
---	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	---	---
Σ Aromatic	---	---
Σ Paraffin	15	100
Acetylene	---	---
	15	

	ppbC
Total Unidentified Hydrocarbons	20
Total NMHC by summing individual species	35

TABLE G19. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0740 DURING FLIGHT OF 8/15/79 OVER SITE 11 (350')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	---	2,3-Dimethylpentane
---	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
6.0	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
4.5	i-Butane	---	2,4-Dimethylhexane
9.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	1.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
6.0	i-Pentane	---	n-Octane
6.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	0.8	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
1.5	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
0.8	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
1.5	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	---	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
0.8	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	---	---
Σ Aromatic	5	10
Σ Paraffin	40	90
Acetylene	---	---
	45	

	ppbC
Total Unidentified Hydrocarbons	9
Total NMHC by summing individual species	54

TABLE G30. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1101 DURING FLIGHT OF 8/15/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	---	2,3-Dimethylpentane
6.8	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
4.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
1.5	i-Butane	---	2,4-Dimethylhexane
3.8	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	3.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
3.8	i-Pentane	---	n-Octane
3.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	1.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	0.8	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
0.8	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
0.8	2,4-Dimethylpentane	---	1,3-Diethylbenzene
0.8	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	7	18
Σ Aromatic	7	18
Σ Paraffin	23	63
Acetylene	---	---
	37	

	ppbC
Total Unidentified Hydrocarbons	9
Total NMHC by summing individual species	46

TABLE G31. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1104 DURING FLIGHT OF 8/15/79 OVER SITE 6 (100')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	1.5	2,3-Dimethylpentane
9.0	Ethylene	2.3	3-Methylhexane
4.5	Acetylene	1.5	2,2,3-Trimethylpentane
6.0	Propane	1.5	n-Heptane
3.0	Propene	0.8	Methylcyclohexane
5.3	i-Butane	0.8	2,4-Dimethylhexane
11.3	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	11.3	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
12.8	i-Pentane	0.8	n-Octane
8.3	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
2.3	t-2-Pentene	4.5	p & m-Xylene
6.0	c-2-Pentene	---	Styrene
---	Cyclopentene	2.3	o-Xylene
---	Cyclopentane	0.8	n-Nonane
0.8	2,3-Dimethylbutane	---	i-Propylbenzene
3.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.5	p-Ethyltoluene
2.3	3-Methylpentane	0.8	m-Ethyltoluene
---	1-Hexene	2.3	o-Ethyltoluene
3.8	n-Hexane	1.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	2.3	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
5.3	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.3	Benzene	---	1,4-Diethylbenzene
0.8	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	12	10
Σ Aromatic	22	18
Σ Paraffin	86	69
Acetylene	5	4
	125	

	ppbC
Total Unidentified Hydrocarbons	5
Total NMHC by summing individual species	130

TABLE G32. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 0651 DURING FLIGHT OF 8/16/79 OVER SITE 11 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.5	Ethane	---	2,3-Dimethylpentane
--	Ethylene	---	3-Methylhexane
--	Acetylene	---	2,2,3-Trimethylpentane
2.0	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
1.5	i-Butane	---	2,4-Dimethylhexane
2.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	1.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
3.0	i-Pentane	---	n-Octane
1.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	---	Ethylbenzene
---	t-2-Pentene	---	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	---	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	---	o-Ethyltoluene
--	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	---	---
Σ Aromatic	2	10
Σ Paraffin	15	90
Acetylene	---	---
	17	

	ppbC
Total Unidentified Hydrocarbons	4
Total NMHC by summing individual species	21

TABLE G33. HYDROCARBON CONCENTRATIONS COLLECTED IN SAMPLE AT 0654 DURING FLIGHT OF 8/16/79 OVER SITE 11 (500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
2.5	Ethane	---	2,3-Dimethylpentane
---	Ethylene	---	3-Methylhexane
---	Acetylene	---	2,2,3-Trimethylpentane
1.5	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
1.5	i-Butane	---	2,4-Dimethylhexane
1.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	2.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
1.5	i-Pentane	---	n-Octane
---	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.5	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.0	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
---	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
---	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
---	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.5	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
---	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	---	---	Total Unidentified Hydrocarbons	29
Σ Aromatic	17	68		
Σ Paraffin	8	32	Total NMHC by summing individual species	54
Acetylene	---	---		
	25			

TABLE G34. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1026 DURING FLIGHT OF 8/16/79 OVER SITE 6 (1500')

ppbC	Hydrocarbon	ppbC	Hydrocarbon
3.5	Ethane	---	2,3-Dimethylpentane
2.5	Ethylene	---	3-Methylhexane
2.0	Acetylene	---	2,2,3-Trimethylpentane
2.0	Propane	---	n-Heptane
---	Propene	---	Methylcyclohexane
2.5	i-Butane	---	2,4-Dimethylhexane
6.5	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	4.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
6.0	i-Pentane	---	n-Octane
4.0	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.0	Ethylbenzene
---	t-2-Pentene	2.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.0	o-Xylene
---	Cyclopentane	---	n-Nonane
---	2,3-Dimethylbutane	---	i-Propylbenzene
2.0	2-Methylpentane	---	n-Propylbenzene
---	c-4-Methyl-2-pentene	---	p-Ethyltoluene
1.0	3-Methylpentane	---	m-Ethyltoluene
---	1-Hexene	1.0	o-Ethyltoluene
2.0	n-Hexane	---	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
---	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
1.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	3	5
Σ Aromatic	12	26
Σ Paraffin	29	64
Acetylene	2	4
	45	

	ppbC
Total Unidentified Hydrocarbons	11
Total NMHC by summing individual species	56

TABLE G35. HYDROCARBON CONCENTRATIONS IN SAMPLE COLLECTED AT 1029 DURING FLIGHT OF 8/16/79 OVER SITE 6

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	1.5	2,3-Dimethylpentane
2.0	Ethylene	1.5	3-Methylhexane
---	Acetylene	1.5	2,2,3-Trimethylpentane
4.5	Propane	1.5	n-Heptane
1.5	Propene	---	Methylcyclohexane
6.0	i-Butane	---	2,4-Dimethylhexane
21.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	9.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
17.5	i-Pentane	1.0	n-Octane
10.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	5.0	p & m-Xylene
---	c-2-Pentene	1.5	Styrene
---	Cyclopentene	3.0	o-Xylene
1.0	Cyclopentane	2.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
4.5	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
3.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	2.0	o-Ethyltoluene
6.0	n-Hexane	2.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	8.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	1.0	1,3-Diethylbenzene
2.5	Benzene	1.0	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	5	4	Total Unidentified Hydrocarbons	43
Σ Aromatic	43	30		
Σ Paraffin	93	66	Total NMHC by summing individual species	184
Acetylene	---	---		
	141			

APPENDIX H

Individual Hydrocarbon Concentrations in Samples Collected for Intercomparison Purposes

TABLE H1. HYDROCARBON CONCENTRATIONS IN 14:25-15:25 LUMBERTON NEW JERSEY SITE SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	2.0	2,3-Dimethylpentane
39.0	Ethylene	2.5	3-Methylhexane
2.5	Acetylene	2.0	2,2,3-Trimethylpentane
6.0	Propane	2.5	n-Heptane
3.0	Propene	2.5	Methylcyclohexane
12.0	i-Butane	1.0	2,4-Dimethylhexane
52.0	n-Butane	0.5	2,3,4-Trimethylpentane
3.5	1-Butene	20.0	Toluene
4.5	i-Butene	1.0	2,3-Dimethylhexane
2.0	t-2-Butene	2.0	2-Methylheptane
---	c-2-Butene	3.0	3-Ethylhexane
13.5	i-Pentane	3.0	n-Octane
14.5	n-Pentane	1.0	Ethylcyclohexane
---	1-Pentene	7.5	Ethylbenzene
---	t-2-Pentene	24.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	10.0	o-Xylene
1.0	Cyclopentane	12.0	n-Nonane
1.0	2,3-Dimethylbutane	1.5	i-Propylbenzene
4.5	2-Methylpentane	5.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	5.0	p-Ethyltoluene
4.0	3-Methylpentane	6.5	m-Ethyltoluene
---	1-Hexene	15.0	o-Ethyltoluene
14.0	n-Hexane	17.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	37.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	8.0	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
5.0	Benzene	2.0	1,4-Diethylbenzene
2.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	63	16
Σ Aromatic	155	40
Σ Paraffin	168	43
Acetylene	3	1
	388	

	ppbC
Total Unidentified Hydrocarbons	156
Total NMHC by summing individual species	544

TABLE H2. HYDROCARBON CONCENTRATIONS IN 13:25-14:25 LUMBERTON NEW JERSEY SITE SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
6.0	Ethane	5.5	2,3-Dimethylpentane
33.0	Ethylene	6.0	3-Methylhexane
4.0	Acetylene	2.0	2,2,3-Trimethylpentane
15.5	Propane	5.0	n-Heptane
5.5	Propene	3.0	Methylcyclohexane
104.	i-Butane	1.0	2,4-Dimethylhexane
239.	n-Butane	1.0	2,3,4-Trimethylpentane
12.5	1-Butene	23.0	Toluene
15.0	i-Butene	1.0	2,3-Dimethylhexane
11.0	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	2.0	3-Ethylhexane
93.5	i-Pentane	3.5	n-Octane
59.5	n-Pentane	1.5	Ethylcyclohexane
9.0	1-Pentene	5.5	Ethylbenzene
---	t-2-Pentene	13.0	p & m-Xylene
---	c-2-Pentene	4.0	Styrene
1.0	Cyclopentene	8.0	o-Xylene
4.5	Cyclopentane	12.0	n-Nonane
4.5	2,3-Dimethylbutane	2.0	i-Propylbenzene
19.5	2-Methylpentane	9.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
14.0	3-Methylpentane	8.0	m-Ethyltoluene
---	1-Hexene	13.5	o-Ethyltoluene
21.5	n-Hexane	12.5	1,3,5-Trimethylbenzene
1.5	t-2-Hexene	37.0	1,2,4-Trimethylbenzene
1.0	c-2-Hexene	9.5	1,2,3-Trimethylbenzene
4.0	Methylcyclopentane	8.5	Methylstyrene
2.0	2,4-Dimethylpentane	4.0	1,3-Diethylbenzene
6.5	Benzene	5.0	1,4-Diethylbenzene
3.5	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	94	10
Σ Aromatic	162	18
Σ Paraffin	645	71
Acetylene	4	--
	905	

	ppbC
Total Unidentified Hydrocarbons	216
Total NMHC by summing individual species	1121

TABLE H3. HYDROCARBON CONCENTRATIONS IN 0700-0800 DOWNINGTOWN PENNSYLVANIA SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	2.0	2,3-Dimethylpentane
75.5	Ethylene	2.0	3-Methylhexane
5.5	Acetylene	4.0	2,2,3-Trimethylpentane
4.0	Propane	2.0	n-Heptane
3.5	Propene	1.5	Methylcyclohexane
6.0	i-Butane	1.0	2,4-Dimethylhexane
25.5	n-Butane	1.0	2,3,4-Trimethylpentane
---	1-Butene	13.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	1.0	3-Ethylhexane
15.0	i-Pentane	1.5	n-Octane
8.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	2.5	Ethylbenzene
---	t-2-Pentene	8.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	3.5	o-Xylene
0.5	Cyclopentane	2.5	n-Nonane
1.5	2,3-Dimethylbutane	---	i-Propylbenzene
5.0	2-Methylpentane	2.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
3.5	3-Methylpentane	3.0	m-Ethyltoluene
---	1-Hexene	5.0	o-Ethyltoluene
5.5	n-Hexane	3.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	6.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
2.0	Methylcyclopentane	1.0	Methylstyrene
1.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
4.0	Benzene	---	1,4-Diethylbenzene
1.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	81	33	Total Unidentified Hydrocarbons	36
Σ Aromatic	39	16		
Σ Paraffin	118	49	Total NMHC by summing individual species	280
Acetylene	6	2		
	244			

TABLE H4 . HYDROCARBON CONCENTRATIONS IN 0700-0800 DOWNINGTOWN PENNSYLVANIA SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	1.5	2,3-Dimethylpentane
50.0	Ethylene	1.5	3-Methylhexane
2.0	Acetylene	2.5	2,2,3-Trimethylpentane
2.5	Propane	1.0	n-Heptane
2.0	Propene	1.0	Methylcyclohexane
4.0	i-Butane	---	2,4-Dimethylhexane
10.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	7.0	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	1.0	2-Methylheptane
---	c-2-Butene	0.5	3-Ethylhexane
9.5	i-Pentane	---	n-Octane
4.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	1.5	Ethylbenzene
---	t-2-Pentene	4.0	p & m-Xylene
---	c-2-Pentene	---	Styrene
---	Cyclopentene	1.5	o-Xylene
---	Cyclopentane	1.0	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
3.0	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	1.0	p-Ethyltoluene
2.0	3-Methylpentane	1.0	m-Ethyltoluene
---	1-Hexene	2.5	o-Ethyltoluene
2.5	n-Hexane	1.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	1.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.0	Methylcyclopentane	---	Methylstyrene
.10	2,4-Dimethylpentane	---	1,3-Diethylbenzene
2.5	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	52	39
Σ Aromatic	25	19
Σ Paraffin	55	41
Acetylene	2	2
	133	

	ppbC
Total Unidentified Hydrocarbons	10
Total NMHC by summing individual species	143

TABLE H5. HYDROCARBON CONCENTRATIONS IN 0800-0900 DOWNINGTOWN PENNSYLVANIA SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	1.5	2,3-Dimethylpentane
4.0	Ethylene	1.5	3-Methylhexane
3.5	Acetylene	1.5	2,2,3-Trimethylpentane
3.5	Propane	1.5	n-Heptane
2.5	Propene	---	Methylcyclohexane
5.0	i-Butane	---	2,4-Dimethylhexane
14.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	7.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
10.5	i-Pentane	1.0	n-Octane
6.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	8.5	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.0	o-Xylene
---	Cyclopentane	2.0	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
3.5	2-Methylpentane	1.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	.10	p-Ethyltoluene
2.5	3-Methylpentane	1.5	m-Ethyltoluene
---	1-Hexene	3.0	o-Ethyltoluene
3.0	n-Hexane	3.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	5.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	1.0	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
---	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%		ppbC
Σ Olefin	7	7	Total Unidentified Hydrocarbons	44
Σ Aromatic	42	42		
Σ Paraffin	49	48	Total NMHC by summing individual species	146
Acetylene	4	3		
	102			

TABLE H6. HYDROCARBON CONCENTRATIONS IN 0900-1000 DOWNINGTOWN PENNSYLVANIA SAMPLE ON 8/17/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
4.0	Ethane	1.5	2,3-Dimethylpentane
6.0	Ethylene	1.5	3-Methylhexane
4.0	Acetylene	2.5	2,2,3-Trimethylpentane
3.5	Propane	1.5	n-Heptane
2.5	Propene	1.5	Methylcyclohexane
5.0	i-Butane	---	2,4-Dimethylhexane
17.0	n-Butane	---	2,3,4-Trimethylpentane
---	1-Butene	9.5	Toluene
---	i-Butene	---	2,3-Dimethylhexane
---	t-2-Butene	---	2-Methylheptane
---	c-2-Butene	---	3-Ethylhexane
11.0	i-Pentane	1.5	n-Octane
7.5	n-Pentane	---	Ethylcyclohexane
---	1-Pentene	3.0	Ethylbenzene
---	t-2-Pentene	9.0	p & m-Xylene
---	c-2-Pentene	1.0	Styrene
---	Cyclopentene	4.5	o-Xylene
---	Cyclopentane	4.0	n-Nonane
1.0	2,3-Dimethylbutane	---	i-Propylbenzene
3.5	2-Methylpentane	2.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	2.0	p-Ethyltoluene
2.5	3-Methylpentane	2.5	m-Ethyltoluene
---	1-Hexene	6.5	o-Ethyltoluene
3.0	n-Hexane	7.0	1,3,5-Trimethylbenzene
---	t-2-Hexene	13.5	1,2,4-Trimethylbenzene
---	c-2-Hexene	---	1,2,3-Trimethylbenzene
1.5	Methylcyclopentane	---	Methylstyrene
1.0	2,4-Dimethylpentane	---	1,3-Diethylbenzene
3.0	Benzene	---	1,4-Diethylbenzene
---	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	10	
Σ Aromatic	63	
Σ Paraffin	74	
Acetylene	4	
	150	

	ppbC
Total Unidentified Hydrocarbons	111
Total NMHC by summing individual species	261

TABLE H7. HYDROCARBON CONCENTRATIONS IN DOWNTOWN LANCASTER SAMPLE ON 8/14/79

ppbC	Hydrocarbon	ppbC	Hydrocarbon
27.5	Ethane	18.5	2,3-Dimethylpentane
48.0	Ethylene	19.5	3-Methylhexane
14.0	Acetylene	42.0	2,2,3-Trimethylpentane
12.0	Propane	13.0	n-Heptane
18.5	Propene	10.0	Methylcyclohexane
25.0	i-Butane	12.5	2,4-Dimethylhexane
68.5	n-Butane	11.5	2,3,4-Trimethylpentane
6.5	1-Butene	66.5	Toluene
9.5	i-Butene	2.0	2,3-Dimethylhexane
3.5	t-2-Butene	16.0	2-Methylheptane
---	c-2-Butene	12.0	3-Ethylhexane
85.5	i-Pentane	10.5	n-Octane
42.5	n-Pentane	4.0	Ethylcyclohexane
---	1-Pentene	21.0	Ethylbenzene
---	t-2-Pentene	80.0	p & m-Xylene
---	c-2-Pentene	14.5	Styrene
1.0	Cyclopentene	41.0	o-Xylene
5.0	Cyclopentane	10.5	n-Nonane
9.0	2,3-Dimethylbutane	3.5	i-Propylbenzene
35.5	2-Methylpentane	9.5	n-Propylbenzene
2.0	c-4-Methyl-2-pentene	29.0	p-Ethyltoluene
23.0	3-Methylpentane	12.0	m-Ethyltoluene
1.5	1-Hexene	27.0	o-Ethyltoluene
24.5	n-Hexane	7.0	1,3,5-Trimethylbenzene
2.5	t-2-Hexene	9.0	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	2.0	1,2,3-Trimethylbenzene
17.5	Methylcyclopentane	1.5	Methylstyrene
8.5	2,4-Dimethylpentane	---	1,3-Diethylbenzene
26.5	Benzene	---	1,4-Diethylbenzene
5.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	111	11
Σ Aromatic	330	32
Σ Paraffin	571	56
Acetylene	14	1
	1026	

	ppbC
Total Unidentified Hydrocarbons	147
Total NMHC by summing individual species	1173

TABLE H8. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/14/79 IN DOWNTOWN LANCASTER PENNSYLVANIA #1

ppbC	Hydrocarbon	ppbC	Hydrocarbon
21.5	Ethane	7.0	2,3-Dimethylpentane
38.5	Ethylene	8.0	3-Methylhexane
25.5	Acetylene	6.0	2,2,3-Trimethylpentane
11.5	Propane	6.5	n-Heptane
22.5	Propene	4.5	Methylcyclohexane
39.0	i-Butane	2.0	2,4-Dimethylhexane
44.0	n-Butane	1.5	2,3,4-Trimethylpentane
5.5	1-Butene	29.5	Toluene
6.5	i-Butene	2.0	2,3-Dimethylhexane
2.5	t-2-Butene	3.5	2-Methylheptane
---	c-2-Butene	5.5	3-Ethylhexane
45.5	i-Pentane	5.5	n-Octane
25.0	n-Pentane	2.5	Ethylcyclohexane
8.5	1-Pentene	7.0	Ethylbenzene
---	t-2-Pentene	19.0	p & m-Xylene
---	c-2-Pentene	3.0	Styrene
---	Cyclopentene	10.5	o-Xylene
1.5	Cyclopentane	3.0	n-Nonane
3.0	2,3-Dimethylbutane	---	i-Propylbenzene
12.5	2-Methylpentane	8.0	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
12.0	3-Methylpentane	4.0	m-Ethyltoluene
---	1-Hexene	7.0	o-Ethyltoluene
12.0	n-Hexane	2.0	1,3,5-Trimethylbenzene
1.0	t-2-Hexene	2.0	1,2,4-Trimethylbenzene
1.5	c-2-Hexene	---	1,2,3-Trimethylbenzene
6.0	Methylcyclopentane	1.0	Methylstyrene
2.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
16.5	Benzene	1.0	1,4-Diethylbenzene
4.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	91	18
Σ Aromatic	112	22
Σ Paraffin	293	56
Acetylene	26	5
	520	

	ppbC
Total Unidentified Hydrocarbons	105
Total NMHC by summing individual species	625

TABLE H9. HYDROCARBON CONCENTRATIONS IN SURFACE SAMPLE COLLECTED ON 8/14/79 IN DOWNTOWN LANCASTER, PENNSYLVANIA #2

ppbC	Hydrocarbon	ppbC	Hydrocarbon
23.0	Ethane	4.5	2,3-Dimethylpentane
35.0	Ethylene	5.0	3-Methylhexane
22.0	Acetylene	3.5	2,2,3-Trimethylpentane
13.0	Propane	4.5	n-Heptane
12.0	Propene	3.5	Methylcyclohexane
21.5	i-Butane	1.5	2,4-Dimethylhexane
49.5	n-Butane	1.0	2,3,4-Trimethylpentane
3.0	1-Butene	18.5	Toluene
6.5	i-Butene	1.5	2,3-Dimethylhexane
2.5	t-2-Butene	3.0	2-Methylheptane
---	c-2-Butene	3.5	3-Ethylhexane
48.5	i-Pentane	6.0	n-Octane
28.5	n-Pentane	2.5	Ethylcyclohexane
4.0	1-Pentene	6.0	Ethylbenzene
---	t-2-Pentene	15.5	p & m-Xylene
---	c-2-Pentene	4.5	Styrene
---	Cyclopentene	10.0	o-Xylene
1.5	Cyclopentane	10.5	n-Nonane
2.5	2,3-Dimethylbutane	1.5	i-Propylbenzene
12.5	2-Methylpentane	6.5	n-Propylbenzene
---	c-4-Methyl-2-pentene	4.5	p-Ethyltoluene
8.0	3-Methylpentane	6.0	m-Ethyltoluene
---	1-Hexene	10.0	o-Ethyltoluene
10.0	n-Hexane	4.5	1,3,5-Trimethylbenzene
---	t-2-Hexene	14.0	1,2,4-Trimethylbenzene
---	c-2-Hexene	2.5	1,2,3-Trimethylbenzene
5.5	Methylcyclopentane	2.5	Methylstyrene
2.0	2,4-Dimethylpentane	1.5	1,3-Diethylbenzene
9.0	Benzene	1.0	1,4-Diethylbenzene
3.0	Cyclohexane		

Total Identified Hydrocarbons	ppbC	%
Σ Olefin	70	14
Σ Aromatic	111	23
Σ Paraffin	279	58
Acetylene	22	5
	483	

	ppbC
Total Unidentified Hydrocarbons	105
Total NMHC by summing individual species	588